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## Contents



## Diary Dates

**March 15**

**Foundation Lecture**

Dr. Klaus Florey, "Edward Robinson Squibb - the man and his company".

**April 21-23**

**Spring Conference**

To be held at the Stakis Grosvenor Hotel, Edinburgh. Programme to be announced later.

**May 3**

Arthur Wright, "Early Advertising and Media".

**September 13**

British Pharmaceutical Conference, Keele University. History of Pharmacy Session, 2 p.m.

**November 8**

Rev. Gordon Taylor, Rector St. Giles-in-the-Fields, London 'The Bloomsbury Dispensary'.

**Infant feeding** - An association devoted to the history of infant feeding, has been formed. Membership includes collectors of artefacts and ephemera related to the subject as well as serious researchers in the field. A quarterly newsletter is published. Further information may be obtained from:
Janet Illingworth-Cooper, Editor, H.I.F.A., 2a Oxford Street, Gloucester, GL1 3EQ

### Books Received

**Archives of the British Chemical Industry 1750-1914**

P.J.T. Morris, C.A. Russell. Editor J.G. Smith.
Pub. British Society for the History of Science,
31 High Street, Stanford in the Vale, Faringdon,
Oxfordshire SN7 8LH. 287pp, £14.50, $31.00

The text is a series of references under company titles. The sub headings used are: Products; Location; History; Bibliography and Archives.
Whilst the pharmaceutical industry is included, there are companies dealing in explosives, agricultural materials, acids, alkalis and dyestuffs and some 200 historical sketches of the businesses concerned will prove valuable pointers to historians and writers. Above all there are a series of indexes of people, firms, places materials and subjects together with an index of archives and an address list that should be of unique assistance to those needing to have recourse to original material.

**18th Century Medics: Subscriptions, Licences and Apprenticeships**

The second edition of the above work when compared with the original of 1985 is greatly improved, revised and extended. The main part, 678 pp, is a *Register* of medical practitioners from all parts of the English-speaking world, containing some 85,000 entries, many of them being summary biographies. The Introduction explains the scope of the work, provides a preliminary analysis, and concludes with pointers to the use of the material for research in many varied fields.
Copies (£80) are available from PHIBB, 43 Briarfield Road, Newcastle upon Tyne NE3 3UH

### Museum Slides and Tape

Thirty eight transparencies and a recorded tape describing the museum of the Royal Pharmaceutical Society are available on loan and are a useful introduction to the origins and development of the museum and its current activities. There are references to the *materia medica* collections (now at Kew), early acquisitions, ceramics artefacts, prints and photographs, underlining the museum's attempts to record all aspects of the history of pharmacy.
Within a 'running time" of 30 minutes the scope of the presentation is of necessity, superficial at times, nevertheless it should encourage a wider interest in the museum and the history of pharmacy and be compulsory viewing for students in schools of pharmacy.



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# An Aristocratic Surgeon
# Thomas Gery Cullum, (1741 - 1831)

*Member of the Royal College of Surgeons*
*Fellow of the Royal and Linnean Societies.*

**By Noel G.J. Stow**

During the 17th, 18th and early 19th Centuries the Cullum family was an important part of the local gentry of the country market town of Bury St Edmunds, contributing greatly to the town's activities and possessions and Bury is now the proud owner of the Cullum art collection, documents, china and library.

Thomas Gery was the second son of Sir John Cullum, 5th baronet, by his second wife, Susanna, daughter of Sir Thomas Gery. He was born on the 30th November, 1741, at Hardwick House, an impressive manor house on the outskirts of Bury St Edmunds. The house was demolished in the 1930's, but it's grounds, Hardwick Heath, remain as a fine open space for present day Burians. After education at the Charterhouse, Thomas Gery attended lectures by William and John Hunter at the Windmill Street School of Anatomy.[1] Founded by William it became the centre of anatomical learning in London for many years.[2]

Following this course of study Cullum was admitted a member of the corporation of Surgeons on May 7, 1778. A few months earlier on January 6, 1778 he had been elected by the Guardians of the Poor in Bury St Edmunds as surgeon at the annual salary of £6 13s 8d and *"agreed in Fractures and all other Surgery Cases (venereal included) to look after and administer all outward (but no internal) Medicines to all the Poor in the care of the Guardians.*[3]"

In 1788 he succeeded his brother, Sir John, as 7th baronet. In spite of his professional and civil duties -he was an alderman, and later Mayor, of his native town, he had sufficient time to follow the study of his great love - botany, making frequent visits to the meetings of the Royal and Linnean Societies in London, and in 1774 privately printed his *'Florae Anglicae'*. Amongst the Cullam papers in the Suffolk Record Office at Bury St Edmunds are the Common place book of Sir Thomas Gery[5] and the account book of Mary, Lady Cullum, his wife.[4] In these the Surgeon recorded details of prescriptions that he had found particularly useful as well as those for himself and family, often making comments on their effectiveness; many of the prescriptions had been written by the leading members of the profession. Sir Thomas also included notes on household recipes, prices and source of drugs and surgical items, botanical notes and details of quacks and their nostrums!

Approaching the age of 60, Sir Thomas began to have the need to consult physicians and in 1799 the surgeon was advised to take Compound Decoction of Sarsaparilla each night and morning but he wrote *"NB I could not bear the Dec. Sarsae Co on account of the pungency of the Mezereon Root"* The decoction contained in addition to Sarsaparilla, Sassafras Root, shavings of Guaiacum wood, bruised liquorice root and the bark of the Mezeron Root. The 1820 Conspectus of Pharmacopias noted that "This preparation is similar to the celebrated *Lisbon Diet Drink"*[6]

The following year he was attacked by *"giddiness which lasted me for several weeks"*, for which on January 2, 1800 he was prescribed pills containing:-

Asafoetida 1 drachm
Aloes Socotra pulverat grs iii
M Caryophyl aromat 1½ozs
Syr Croci qs

*" I cannot say I was much relieved by the above medicine and very little by the repeated application of a blister and having a dislike to Cloves I changed it for Oyl of Peppermint' TGC*[4]

In 1808 Sir Thomas made a journey to Cheltenham and he records the following:-

Ext Colocynth Co
Scammoni Aleppo
Gutt Gamboge aa ½ drachm
Contunde in Massam et divide in Pilas xx
Sum ii pro re nata

"Cheltenham 30 Jul 1808 -" *The above prescription given me by Mr Newell, an eminent Surgeon and Apothecary, having taken one of these pills which produced a very considerable effect without any griping or sickness I requested Mr Newell to favour me with the Prescription' TGC. Copied from the original penned by Mr Newell in my memo book"*[4]

The same eminent medical practitioner gave him a formula for Cheltenham Salts Water Imitation in 1817:- *¼ oz Cheltenham Salts, a drachm of Epsom in a pint of spring water, take two glasses in the morning, as the water is drank at the wells. 'I would advise that a little hot water be put to each half pint when you take it, which I observe is frequently done at the Pump rooms, lest the mixture should be too cold for the stomach' TGC*

Dr Blane on June 1 1811 advised Sir Thomas Gery to take large sized wine glass of a mixture of half a pint each, of Decot Sarsap Co. and Inf Quassia with 1 drachm of soda, three times a day. He also prescribed pills containing:-

Pulv Antimonalis
Pulv Ipecac aa grs xl
Ext Colocynth co gr vi
Syr qs
*Contunde & divid in Pilulae octe. Summantur duas omni nocte.*

Dr Blane was Sir Gilbert Blane (1749 - 1834) who also studied under William Hunter, through whose influence he was appointed personal physician to Admiral Sir George Rodney and later Physician to the Fleet. He returned to set up practice as a physician in London in 1783 and was on the staff of St Thomas's Hospital, and was made a baronet in 1812.[2]

In 1813 Sir Thomas consulted Sir Henry Halford, (1766 -



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1844) President of the Royal College of Surgeons, who on April 17, 1813 prescribed:–

Ext Coloynth Co 2 drachms
Pil Sap c Opii 1 scruple
mf cautissimo distribii in pilas xxiv sumat duas omni nocte.

The patient added the note *"NB After using the Pills a few times I found them too purgative and have since only taken one at bedtime. TGC"*[4] The next month on May 2 Sir Henry changed the prescription to:–

Extract Coni
Floris Benzois aa 1 scruple
mf cautissimo distribii in pilas xx Sumat duas omni nocte.

Sir Thomas added *'NB These pills by no means agreed with me and I reaffirmed the use of the first prescription"*[4] In 1824 Astley Cooper prescribed pills containing 2 grains of Extract of Hyoscyamus and 1 grain of Camphor to be taken at night. Sir Astley Cooper (1768 – 1841) was another pupil of the Hunters, he had an enormous practice and it is said that for some years his annual income was never less than £15,000.[2]

Several prescriptions written by Matthew Baillie were recorded by Sir Thomas eg:–

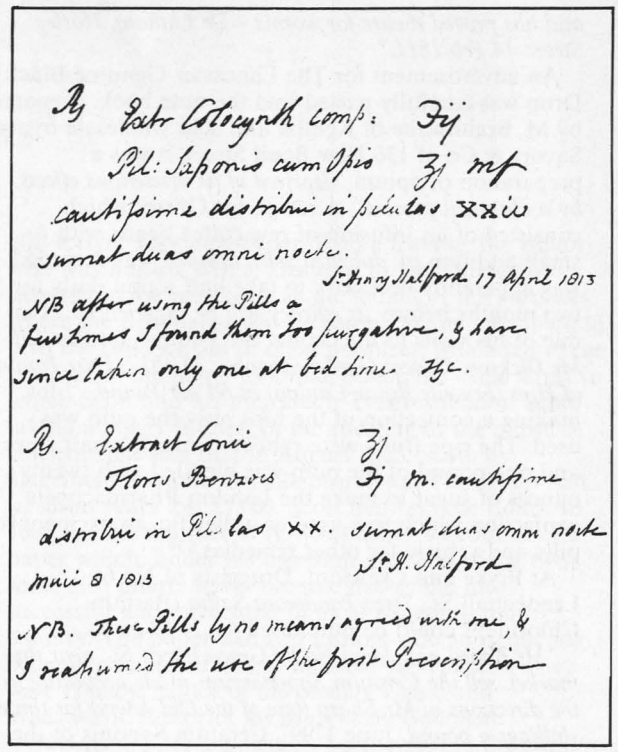
Aq Menth pip 10dr
Inf Gent ½oz
Magnes istriolat ½ drachm
*fiat haustus omni mane at meridae sumendus*
8 May 1809 For Sir TGC[4]

Matthew Baillie was the nephew of the Hunters, he taught anatomy in London for twenty years, acquired a large fortune as a physician. He was physician at St George's Hospital and physician to King George III, whom he attended during his last illness.[2]

A contemporary medical botanist was the famous William Withering and one of his prescriptions is recorded – "Glaubers Salts and Magnesia in half a pint of water with the directions *Quench a red hot poker in it and sip it as warm as you can in the morning' – a prescription given to my friend J. Woodward Esq., for a complaint in his stomach and from which he rec'd much benefit* (Mr Woodward to TGC 1799)[4]"

The only local medical practitioner whose prescriptions Sir Thomas noted were of those of Dr W H Wollaston, a remarkable man who in 1797 left his practice in Bury St Edmunds to set up in Cecil Street, London. Three years later he gave up medical practice to devote his time to physics, chemistry and botany, moving to Buckingham Street where he set up a laboratory and in the next few years published no less than 56 papers on pathology, physiology, chemistry, optics mineralology, crystalography and astronomy! His greatest work was the discovery of a method of producing pure platinum from which he constructed vessels for the concentration of sulphuric acid, the commercial application of this earned him a fortune and in 1828 the Royal Society awarded him a Royal Medal for this work.[1]

It is to Wollaston that we owe the imperial gallon, for, in 1814, in evidence before a committee of the House of Commons he suggested replacing the various gallons then in use by a gallon containing 10lbs of water and this was adopted in the Weights & Measures Act of 1824[2]


℞ Extr Colocynth comp: ℥ij
Pil: Saponis cum Opio ℥j mf
cautissime distribui in pilulas xxiv
sumat duas omni nocte.
St Henry Halford 17 April 1813
NB after using the Pills a
few times I found them too purgative, & have
since taken only one at bed time. TGC.

℞. Extract Conii ℥ij
Floris Benzoes ℥ij m. cautissime
distribui in Pil. las xx. sumat duas omni nocte
Maii 2 1813 St H. Halford
NB. These Pills by no means agreed with me, &
I reassumed the use of the first Prescription

Whilst he was still in Bury Dr Wollaston was pursuing his interest in science for the following note appears:–

*'An Amalgam for the Rubbers of Electrical Machines communicated to me 18 Aug 1797 by Dr W Hyde Wollaston MD –*

Mercury 5 parts
Zinc 1 part
Fat 2 parts

*Melt the Zinc by means of the flame of a lamp and blow pipe and holding it over the vessel that contains the Mercury let it drop upon the Mercury and it will amalgamate very readily and completely, the amalgam thus made must be rubbed in a marble or iron mortar with the fat so as to form a complete amalgam.*

Although a provincial surgeon, Sir Thomas Cullum frequently visited London. In 1820 he observed *"The Occulists make use more frequently of the Atropa Belladonna, Deadly Nightshade. . . one drop of the Belladonna infusion. . . put into the Eye, the preceeding Evening and Morning before the operation for the Catarack, to dilate the Pupil, which it does wonderfully well in less than an hour. See Rays Synopsis Plant p 260"*[7]

Later in the book appears the following note – *"At Pearsons, near St Dunstans Church, Fleet St., a Toy Shop, is sold an excellent ointment for complaints on the eye lids as described by Mr Ware under the title of Psorophthalmia, the ointment is called the Golden Ointment, the Proprietor's name Wm Singleton, Lambeth"*

Singleton's Eye Ointment continued to be sold well into the present century, it contained Red Mercuric Oxide 5.45% and the manufacturers claimed it to be "The standard remedy which has outlived the centuries.[8]

Sir Thomas thought it worth noting that *"An ounce of Rectified Oil of Turpentine may be safely taken at one dose*



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*and has proved a cure for worms – Dr Latham, Harley Street, 14 Feb 1811."*

An advertisement for The Lancaster Genuine Black Drop was carefully pasted into the note book. Prepared by M. Braithwaite of Kendal and sold wholesale by Savory & Co of 136 New Bond Street, it was a preparation of opium *"deprived of its deleterious effects, by a chemical process"*. A recipe for Gravel which consisted of an infusion of raw coffee beans with a small addition of *'dulcified spirit of nitre'* was recorded, it was apparently necessary to take half a pint daily for two months before *'its efficacy will be experienced"*. On one of his visits to the capital Sir Thomas bought *"of Mr Dickson, Covent Garden, October 24 1817, Four Pounds of Hips (Fructus Rosae Canina) at 6d per Pound. . .* for making a confection of the hips only the pulp was used. The ripe fruits were rubbed through a hair sieve and one pound of the pulp was blended with twenty ounces of sugar to make the London Pharmacopeia confection which was used as a dietetic, an excipent for pills and vehicle for other remedies.[6],[10]

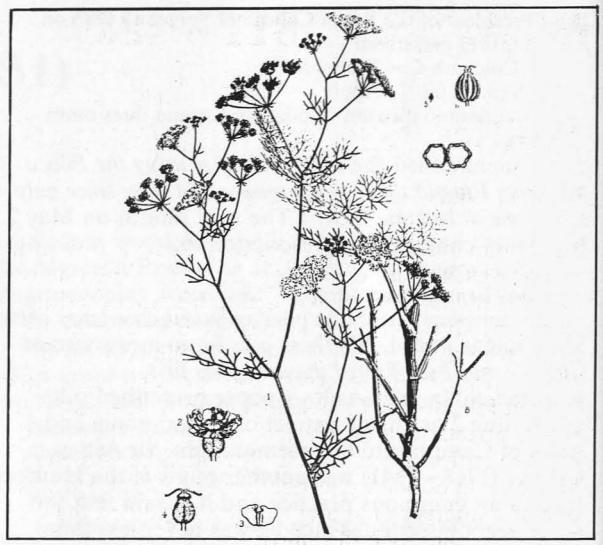
At Pryke and Crawford, Druggists of No 66 Leadenhall St., *Terra Ponderosa Salita* (Barium Chloride)[10] could be purchased *for 2s 6d an oz.*

*"Mr Board and Jones No 89 Gracechurch St., near the market, sell the Ceratum Saponaceum made according to the directions of Mr Sharp (late of the Old Jewry) for three shillings a pound.* June 1799", Ceratum Saponis of the London Pharmacopeia consisted of hard soap, beeswax, lead oxide, olive oil and vinegar, and was used, spread on linen, around fractured limbs after inflammation had abated and the bones united.[6]

In April 1798, Sir Thomas wrote *'Bickerstaff and Jones, (late R Humphries) Druggists, No 27 Aldgate, have lately imported from Bengal the Semina Ajavae (see Murray's Materia Medica & Percival's Esp Essays v 2 p 226) in such quantity as to sell it by retail for two shillings a pound and they have imported likewise (from Germany, they tell me) a large quantity of the Capsules and seeds of the Anisum Stellatum, (Illicium Anisatum of Linnaeus v Gartner) which they can afford to retail at five shillings for the pound' and added in May 1802 'Messrs B & J have obtained from the Ajavan Seeds the Essential Oyl which they sell, if I recollect right, at two shillings the ounce'.*

Ajavan or Ajowan is the fruit of *Carum Ajowan,* an Umbelifer cultivated abundantly in Bengal in the 19th Century, the largest fruits resembling those of common parsley. Ajowan, "Bishop's weed" was used in India as a condiment and medicine from very early times, especially as a carminative.[11] The fruit's properties were due to a volatile oil which they yielded from 5 to 6%, the oil contained 36% thymol and a *liquid hydrocarbon, cymol or cymene.*[12] The official distilled water of the Pharmacopeia of India was said to be a valuable carminative, useful in disguising the taste of disagreeable drugs, especially castor oil.[12] In the 1880's the oil had a value of 8 rupees for a pound and Bombay exported in 1881/2 284 cwts of the seeds to the United Kingdom[11].

As a surgeon Sir Thomas would obviously have been interested in surgical appliances etc., recording in July 1807 that *Mr Guthery, Bougie and True Plaster Maker, No 4 Lower Jones St., Golden Square, sells Plain Diachylon or adhesive plaster, 2 yards in length × 14½ inches in width, for medical men 4/6; Soap Plaster for the same quantity 2/-"*



*Carum Ajowan*

Amongst the preparations noted for the Cullum household were the use of *nitric or muriatic acids to soften putty and remove panes of glass without damage;* a blacking for boots and shoes; a paste to remove grease spots from gentlemen's breeches; Bookbinders Paste and instruction on removing scratches from varnished surfaces.

In September 1831 Sir Thomas died, *"Thursday, at his house in this Town, in the 90th year of his age, Sir Thomas Gery Cullum of Hawstead and Hardwicke House, the 7th baronet, long resident in this neighbourhood. The deceased was Fellow of the Society of Antiquarians and of the Royal and Linnean Societies, County Magistrate, a Deputy Lieutenant and a Capital Burgess of this Borough. He was a gentleman possessed of much useful knowledge on various matters. . ."*[15]

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14 An Essay on Cold, Warm and Vapour Bathing, Clarke. 1819
15 *Bury and Norwich Post,* September 14th. 1831.
16 *Medical Guide,* Reece, 11th edition, 1814.


## Acknowledgements


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# W. A. Scott 1811 - 1889

## Politics, Riots, Murder and News

**By M.E. Wild**

The son of a Customs Officer, W.A. Scott was born in Ellesmere Cheshire on January 26, 1811. When he was 12 years old he was apprenticed to his uncle, a druggist in nearby Overton. Later he moved to Bridgenorth, followed with an assistantship in Wellington. Scott senior was posted to Rochdale in 1833 and a year later his son followed him, to open a shop in Rochdale at 12 Drake Street. Scott was reared in a strong Tory family but by the time he arrived in Rochdale he had changed his political outlook and was then a Liberal. He was one of a number of young men who founded the Rochdale Literary and Philosophical Society.

Scott arrived in Rochdale when the town was divided by a religious and political dispute. In fact it was Tory v Liberal, Church versus Chapel over the payment of Church Rates. The dispute was fiercer than in other towns because of the personalities involved. On the one side was the Vicar, the Rev. J.E.N. Molesworth, a domineering Tory who was opposed by a young John Bright of Liberal persuation who later became a national political figure.

In the early 1840's the battle was waged in words. The vicar published a pamphlet *The Beacon.* This was no parish magazine but pro-Rate propaganda, countered by the anti-Rate party with a pamphlet - *The Vicar's Lantern* edited by a pharmacist Edward Taylor. Beside this battle of words physical contests took place from time to time; carriages were overturned, windows broken and the militia called out to quell what was almost a riot.

At the end of the decade in the 1850's there was a trio of druggists - Scott, Taylor and Booth, all Liberals actively engaged in local politics. Consequently in 1857, along with ten other Liberals who were interested in the use of, and had experience of, propaganda in the Rates dispute, Scott became a shareholder in a newspaper. This paper was the result of the amalgamation of the Standard and the Rochdale Observer. The Liberals had just been defeated in a General Election by the Tories, and felt that two newspapers lessened the impact of the Liberal message on the electorate, furthermore the Liberal candidate alleged that the Tories had kidnapped or "bottled" as it was known, 55 of his pledged men. In addition 24 other pledged men had been persuaded to change their votes. The Speaker of the House of Commons issued a writ for the arrest of the Tory agent, Paul Johnson. Johnson disappeared, not until there was a new session of Parliament did Johnson surface in Rochdale.

After a little time the title *Rochdale Observer* was adopted for the paper. In 1858 six shareholders withdrew. Two years later there were only two shareholders dealing with day to day activities of the *Observer,* - a John Petrie and Scott.

The Editor was a strong Tory churchman who left to edit a rival Tory newspaper. Before leaving, the Editor, who was named White, arranged to have his name inserted in the rent book as the tenant of the premises where the newspaper was produced. White attempted to turn the *Observer* out of these premises, which led to the removal of the paper to Drake Street, the same street in which Scott had his pharmacy. This resulted in Scott taking a bigger interest in the running of the paper. A consequence was that in August 1865, Scott, by agreement, became the sole proprietor. The group had in seven years lost £1,000. Scott had become Editor in 1860. In this manner W.A. Scott acquired control of a paper which, under his direction and that of his two sons, also pharmacists, became one of the most successful and influential of local papers in the country. The paper had two Editors who subsequently became notable editors of national newspapers. They were Hadley, Editor of the *Sunday Times,* and Wadsworth, Editor of the *Manchester Guardian.*

Two years after acquisition Scott enlarged the paper. He had never made a profit of his venture - in fact it had cost him £2,000. However he was fortunate that local events caused an increase of circulation to 6,000. These were the brutal murder of a servant girl in Todmorden Vicarage. Todmorden is about eight miles from Rochdale but the Vicar had been a curate in Rochdale and so the story was of great interest to Observer readers.

The other event was rioting by the Catholics. An Irishman shot a police superintendent and the outcome was rioting.

In 1870 the pharmacy, now in control of his William, was moved into a new building alongside the premises erected to house the newspaper. When away from Rochdale Scott had telegrams sent to him to inform him of the time the paper went 'to bed'. In 1878 he founded the *Heywood Advertiser.*

Besides editing and running a newspaper and the druggist shop Scott was active in local politics. He was one of three druggists who served on the Police Commissioners, the body responsible for the affairs of the town. Scott was the secretary for the committee for the proposed charter of incorporation. When the Borough Council was formed he was elected a councillor for the Castleton Ward. He retired from the Council in 1872. During his time as a Police Commissioner, and later Councillor, he had been an advocate of a Public Library System and so became a member of the Free Library Committee. He also established Science and Art classes.

Scott died in February 1889 and control of the paper passed to his sons Hugh and William, who, in addition to helping to run the paper, had carried on the business of Chemist and Druggist at 84b Drake Street, next door to the newspaper office.



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# Pharmacy in the Australian Colonies – the British Influence*

**by Alistair Lloyd**

The Pharmacy Board of Victoria, not being set up to provide instruction for apprentices, left it to the Society to do so. Shillinglaw, as its Secretary, was therefore directly involved in developing this aspect. The Society's Council first approached Melbourne University to provide lectures, but in 1879 the university refused. Having no other course open to it the Society therefore followed the British model and set up its own school, the first school of pharmacy in Australia. Shillinglaw drafted a scheme which satisfied not only the needs of pharmacy students, but also those studying medicine, dentistry and veterinary science, who also had to undertake pharmaceutical studies.

Shillinglaw and the Victorian Council turned to Great Britain for advice and assistance in developing their fledgling school and its curricula.

All of the colonies accepted British qualified pharmacists to their registers, thus perpetuating regular reinforcement of British influence as British qualified migrants arrived and took their place in the profession. However, this was not reciprocated in Great Britain.

In Great Britain, Australian pharmacists had to wait, and it was not until 1908 that the British Poisons and Pharmacy Act was amended at the request of the Pharmaceutical Society of Great Britain, to permit a by-law which would admit colonial pharmacists to the British register, Not feeling any urgency in the matter, the Pharmaceutical Society of Great Britain Council took another four years to decide to create that by-law. To begin with, it was agreed to admit pharmacists with Victorian and Quuensland qualifications to the British register, while those from the other States had to wait until 1914.

However, in those early days, I suggest it was Shillinglaw's close association with the Victorian College of Pharmacy and his administrative role with the Victorian Society and Board, coupled with his instigation of negotiations with the other colonies on reciprocity and other educational matters, that helped all to develop their pharmacy schools and their registering procedures along lines acceptable to the British Society.

Shillinglaw, as Secretary of the Victorian Society was also directly incvolved with the initial development of the *Australian Pharmaceutical Formulary*, first published in 1902. This formulary was designed to stem the tide of precribing by doctors of proprietory medicines, then of unknown composition, standard or efficacy.

Because the development of the medical and pharmaceutical professions in Australia had been on the British model in the first decade of the 20th Century, there was little understanding of the separate roles of practitioners of medicine and pharmacy. The publication of the APF brought all this into focus, leading eventually to a general agreement of the respective roles – agreements on such matters as acceptable prescription writing protocols and an acceptance of a differentiated role, particularly with the understanding that certain conditions should not be treated by pharmacists because of their characteristics. This was even before restrictions on the use of medicines only to doctors, to treat some conditions was enshrined in poisons legislation.

Another factor was also emerging – the Commonwealth Government began to follow Great Britain by having an interest in the concept of National Health insurance. These two events combined to cause the medical and pharmacy professions to come to an understanding of their respective roles. Shillinglaw was an active participant in these talks which eventually led in Australia to a fairly clear delineation between the function of dispensing to be performed by pharmacists, and the function of prescribing which, except for minor self limiting conditions, is performed by medical practitioners.

Despite our relatively vast distances, compared to the United Kingdom, even now in Australia dispensing doctors do not exist except in some exceedingly remote places. Although firm evidence is hard to find, it seems to me that Shillinglaw must have been involved in at least the administration of the meetings held as a result of the publication of the APF, which led to an understanding of the mutually dependent roles of the two professions in Australia, I suspect to the envy of some of you here.

In 1913 Shillinglaw resigned, by then a fairly autocratic man with firmly set views on how pharmacy should be run. In his latter years, to quote a report of his death in the 'AJP', 'he had to try to adjust his ideas to meet the new views of the later generation and the altered conditions of pharmacy'.

It was a time for change, and the leaders of many of the organisations in pharmacy were now being replaced by younger, more active and more visionary men. In those organisations where change did not occur, new organisations began which eventually took over their roles. Shillinglaw's successor, C L Butchers, was the man for the times. He had been appointed in 1897 as correspondence clerk to Shillinglaw and so served a long 'apprenticeship' with him until Shillinglaw's resignation. It is interesting to note that Butchers' successor, Claude Kent, was similarly 'apprenticed' to Butchers for many years before finally succeeding to his position.

Butchers took over as Secretary of the Pharmaceutical Society of Victoria and Editor of the *Australasian Journal of Pharmacy*. World War I was imminent, and a great change was about to take place in the world including the world of pharmacy.

Butcher came to be revered by the members of the profession he served. His 'genial manner, his graceful tact and his indefatigable labours on behalf of pharmacy' were much admired by all. He quickly became the man at the centre of the most significant

** Part 2 of abstract from the paper given at History Session, British Pharmaceutical Conference, Aberdeen. September 16, 1988 (see Pharmaceutical Historian, Dec. 1988)*



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developments in Australian pharmacy. Like Shillinglaw, he was able to use his position as Editor of the AJP as an influential conduit for his ideas and those from around the world, particularly the United Kingdom.

With interstate and even international travel now becoming easier, he regularly visited all States and in 1923 travelled to the northern hemisphere where he attended a congress of FIP, the office of the Pharmaceutical Society at Bloomsbury Square, and journeyed home through the United States. His contribution to pharmacy was eventually honoured by the Pharmaceutical Society of Great Britain granting him an honorary membership in 1940.

Butchers was instrumental in forming the Pharmaceutical Defence Ltd, of which he became company secretary. The idea was taken up by pharmacists in other States, with the result that the company was eventually set up nationally. He was thus secretary of the first national pharmacy body in Australia for many years.

Because of his pivotal position and ability to negotiate satisfactory conclusions, by 1920 he had been able to achieve agreement between all the State Societies and PDL to adopt the *Australasian Journal of Pharmacy*, then only the Journal of the Victorian Society, as the official journal for all Australian pharmacy organisations. The AJP thus became distributed to all members of each of the State Pharmaceutical Societies. His continued editorship provided him with a platform of profound influence around Australia – that he was able to edit it without serious offence or controversy as well as well as conduct all his other official business, is testimony to his diplomacy and his capacity for work – quite frankly a matter of wonderment to me who now sits in his chair. Butchers carried it all admirably. With his close British links, through the AJP, British practice remained as a most influential determinant of Australian practice for the next 30 or so years – but there was more to come.

After the war the Commonwealth Government continued its interest in the possibility of providing national health insurance. Knowledge of the developments in Great Britain, combined with his visit to the United States where he had been exposed to American thoughts on pharmacy merchandising and business activities, caused him to bring both matters to the attention of Australian pharmacists through the organisations he served. The idea that sound management and commercialisation of pharmacy practice was the way to go, now became a matter of great influence in the business of pharmacy in Australia. Haines in his just published book *'Pharmacy in Australia – The National Experience'* which I commend to you, cites many reasons why those with more professional aspirations were pushed aside at this stage, he believes to the long term detriment of the profession. Be that as it may, what happened was this:

Despite the affluence of the late 1920's, for pharmacists there was fierce competition between themselves and other traders. Coupled with a possibility that the Commonwealth Government would become a player in providing medicines to the Australian community, this caused many pharmacists in Australia to believe that a national organisation to protect and provide for their commercial interests was vital. Until then local trade associations did what they could, but now larger forces were at hand. Proposals for a national body began to be heard, but a body with national responsibilities than those of PDL, which was not properly set up to have a trade protection role, although for a while it attempted to do so.

Butchers then set about selling the idea. He reframed the constitution and rules into a more acceptable form. Possessing as he did the full confidence of representatives of the profession from all States, his tact smoothed over the many difficulties that arose, and his knowledge and foresight was eventually able to have this new federal body, the Pharmaceutical Services Guild of Australia launched successfully. As a result, in August 1928 he was elected the first federal secretary of the Guild.

Under his administration, the Guild developed to protect the interests of Australian pharmacy by providing national marketing schemes along the lines of the NPA, and by negotiating with the Commonwealth Government in the supply of medicines under the Pharmaceutical Benefits Scheme. But, before this, came the depression and to what most Australian pharmacists' eyes, the greatest threat to pharmacy as it was then conducted in Australia. This was Butchers' finest hour.

As the depression began to lift, the Great British firm Boots looked for expansion and saw an opportunity in New Zealand and Australia. Butchers, with his sources in Great Britain, warned Australian and New Zealand pharmacists early of what he saw to be a threat to the interest of Australian and New Zealand individual practitioners. Unfortunately, for many months his warnings went unheeded. Boots bought into New Zealand pharmacy.

Butchers immediately sprang into action and convinced pharmacy leaders of this threat from the United Kingdom. An organisation called the Drug Trade Defence Council was set up in each State with Butchers as national Secretary. Butchers was ready and prepared to fight for the rights and privileges of pharmacists and what he saw as the best interests of the people of Australia and New Zealand.

The Victorian legislation was sufficient to prevent company pharmacy developing, while other States, with the exception of South Australia and New South Wales, the State Parliaments eventually undertook to protect the interests of their pharmacists, if necessary by amendments to their respective Pharmacy Acts. In New South Wales however, company pharmacy had been long established. The government, possibly because of the controversy caused by the Chemist Trade Defence Council, decided, as governments do, to have a Royal Commission into the problem. Justice Brown, the Royal Commissioner, eventually presented his report which, in short, recommended that company pharmacy should be permitted. The Chemist Trade Defence Council driven by Butchers, went into high gear. The New South Wales government eventually rejected that



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recommendation and amended the State Pharmacists Act to prevent corporate pharmacy, the last State of Australia to do so.

In South Australia the government had also refused, for many years, to amend its legislation, but for reasons I have not been able to discover, company pharmacy did not develop there.

Butchers' energy and influence at this time was enormous. His organising and negotiating ability was able to stave off what Australian pharmacists felt was their greatest threat ever. When Butchers died in office in 1941, the accolades for his efforts filled some 17 pages of the journal he had edited for so long.

I hope I have been able to demonstrate that the development of pharmacy in Australia has been significantly and positively influenced by developments in the United Kingdom through the abilities and influence of two non-pharmacist administrators. I have suggested this was due to the close contacts they had with developments in the United Kingdom, through their editing of the most influential pharmacy journal in Australia, at the same time being able to ensure that important matters thus noticed immediately appeared on the agendas of the various organisations.

# Among Plymouth Archives

**By A.G.M. Madge**

Research in the local library, the reference library, local and county archivists' records, copies of wills and church records, has produced some interesting details. The most documented apothecary being John Veale (or Veal) who became a Freeman of the Town (as it was then) on August 31, 1719 and a Common Councilman on July 16, 1722. However, the election was duly declared void. He had not received the Sacrament during the year ending August 6 1722. It is not known if he objected on religious grounds. Attracted by the prestige of office, he mended his ways and was re-elected Councilman on March 27, 1723.

John Veale must have prospered, and moved in the right circles being elected Mayor of Plymouth on September 29, 1736.
He died some time previous to September 1741.

There is a record of another Mayor Robert Cowne, a druggist, who assumed the office in 1712 but died, during his Mayoralty, on Nov 3, 1711. Another druggist is Samuel Doboll mentioned in the records in 1710. In later years the name was probably changed to Dobell.

A well known old Plymouth name was Mudge. There was a John Mudge 1721-1793 who bought an MD of Aberdeen in 1784 and whome records describe as "chirurgeon, surgeon, practitioner in physic, physician". Another noted family, was the Woolcombe's or Wool coombe. There were two. George Woolcombe whose list of apprentices started in 1745 and finished in 1754. Thomas Woolcombe or Woolcoombe whose first apprentices commenced in 1754 and the last in 1783. The well known South Devon family Yonge or more usually Younge was well represented in the various records. There were two James Yonge, father and son surgeons, and Charles Younge who came on the Apothecary scene much later and had seven apprentices from 1760 to 1781. The actual mention of Chemist as such occurs with John Vallacke junr, "apothecary and chymist" 1719, Edmund Moore, "Chemist & Druggist, or druggist" 1777; Frederick Dansey Druggist or chymist", Ruben Rendle, "chemist," William Treffrey, "Chymist", Sampson, D. Payne "Druggist, or, Chymist".

Records show a John Chandler, apothecary, son of a clergyman of Bath who had been made a Freeman of the Society of Apothecaries in 1724/5, a Fellow of the Royal Society in 1734 dying in 1780. On coming to Plymouth he married Anne Cowne at St Andrew's Church on February 23, 1747. Perhaps this was a granddaughter of Robert Cowne the druggist mayor who died during his mayoralty. She would be too old to be a daughter since records show three children born to Anne and John viz., Joseph Trefry December 3, 1775 (any link with the ancient Trefrys of Place, Fowey?), Amy Kemp November 16, 1777, John Kemp March 28, 1780. Here again there may be links with the Kemp apothecaries of Truro Cornwall.

During the Civil War, the heavily beseiged town held off the Royalists commanded by the disliked Grenville and later Prince Rupert. The accounts of the town at that time list those who did business with the Siege Committee supplying goods, services and works

Examination shows apothecary Christopher Eaton mentioned during the seige in 1645-6. It is conjectural if he survived or how long after since there is a record of "A.O., Bound apprentice to Mrs Eaton in 1656". Was she the widow of this Christopher Eaton?

The record also shows that on March 3, 1644, the item "pd Commissary Slade to paye Jno Yorke chirurgeon a weeks Pay in pte of his arrears. During April of that year another item: "pd Charles Goldsmith, Batchelor of Physicke for his services within this garrison as phisition in pte of his arrears of paye".

A study of Wills show one proved for Edward Baker, Apothecary of Plymouth September 12 1601.

Perhaps this brief excursion into local history might encourage other colleagues to spend a few interesting hours on local research. But beware of being bitten by the "bug" it becomes absolutely absorbing.





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## Diary Dates

**September 13**

British Pharmaceutical Conference. Keele University
History of Pharmacy Session 2pm
Mr. Robert Copeland on "Blue and White Staffordshire Ware"
Mr. Martin Shakespeare on "Setting up reconstructed historical pharmacies".

**November 8**

Rev. Gordon Taylor, Rector St. Giles in the Fields, London. "The Bloomsbury Dispensary"

## Officers

At the May meeting the Committee elected the following officers of the Society:-

| | |
|---|---|
| *President* | Dr. M.P. Earles |
| *Vice President* | Mr. W.A. Jackson |
| *Treasurer* | Mr. G. Gunthorpe |
| *Joint Honorary Secretaries* | Dr. W.E. Court and Mr. A. Wright |

*Engraving of Venus and Adonis from "Baunscheidtismus" by Carl Baunscheidt, illustrating the areas in which the Lebenswecker was to be applied. By courtesy of the John Rylands University of Manchester. (See p.2)*



1848

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# Baunscheidtism

**By W.A. Jackson**

*"As Baunscheidtism is known to be the least painful, and most certain method, ever invented, for curing all diseases of the human body, it is, beyond all reasonable doubt, certain, that the invention, if not immediately adopted every where, will, by degrees, force itself on the notice of the world, and will be universally patronised."*
*Carl Baunscheidt.*

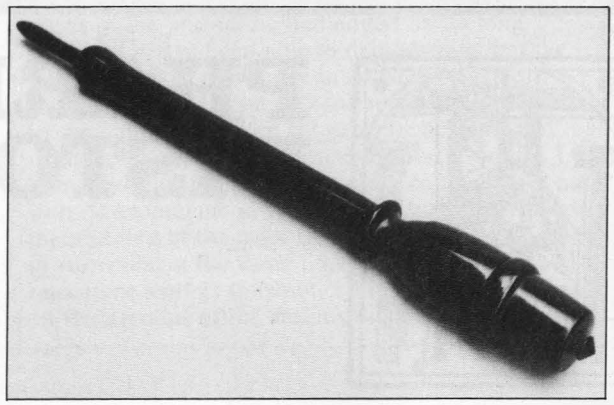
Baunscheidtism, a system of medicine in vogue in the second half of the 19th century, was based upon the principle of counter-irritation.

Carl Baunscheidt, the son of a landowner who could trace his pedigree back to 1333, was born on December 16, 1809, in the village of Baunscheidt, near Hagen in Prussia. He described himself as a "mechanist", and was responsible for a number of inventions including a milk-sucker, artificial leech, ploughing equipment and military weapons. However, he finally achieved fame by the invention of a counter-irritation instrument, on the use of which, the system of medicine known as 'Baunscheidtism' was founded.

His discovery was based on an accident which happened on a warm day. At the time, he was suffering from a chronic ulcer on the left hand, and was sitting with it resting on a cushion on a table. A swarm of gnats, which flew in through nearby open window, settled on the swollen hand, thickly covering it. For some reason, he allowed them to remain there and to sting it. After they had flown away, he described the hand's appearance as being "speckled over like the top of a thimble." Within seconds the pain had completely disappeared, and this impressed him so much that he designed an instrument, which he called a "Lebenswecker" or "Life-Awakener", to simulate the stinging action of the gnats. One of these on my possession has thirty three fine needles which are mounted on a white alloy disc. To this is attached a coiled spring 15.5 centimetres in length, at the other end of which is an ebony handle. This is housed in an ebony tube, the handle protruding from one end, and the needles being contained in an ebony cup at the other. When the instrument is not in use, the cup is covered by a screw cap, making the overall length 27 centimetres.

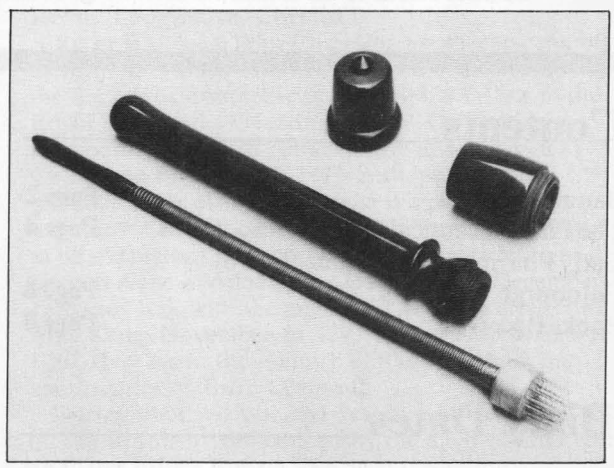
Baunscheidt believed that to a great extent the health of the body was dependent on the skin, mentioning the importance of the 'skins' of insects and the bark of trees to support this hypothesis. He reasoned that disease was caused by the retention of a fine fluid matter lying immediately under the epidermis. If leeches were applied to remove this, they removed blood instead. However, the gnats' stings (or the lebenswecker) left openings in the epidermis which were of the right size and depth for drawing out the "fine but sick-causing fluid", and were so small that they did not affect the circulation of the blood.

He also believed that the liquid injected by the gnats' stings produced an irritation which tended to relieve, quickly and efficaciously, all infectious diseases, so he



*Above: Lebenswecker assembled.*

*Below: Dismantled to show its construction.*



formulated an irritant oil, which he claimed, if rubbed into the wound produced by the lebenswecker, had a similar effect. This oil was yellow in colour and supplied in bottles which had the words 'OLEUM BAUNSCHEIDTII' moulded in the glass. This was also impressed in the red wax bottle seal. It is possible that it was croton oil which was extensively used a counter-irritant, either undiluted or mixed with twice its volume of a bland oil such as olive oil.

When using the lebenswecker the handle was drawn back so that the needles were withdrawn into the cup, which was then placed on the skin in the desired position and the handle released, allowing the needles to penetrate the skin. The depth of penetration could be controlled to some degree by the extent to which the handle was drawn back, the maximum depth being limited by an internal flange in the cup. From five to eight applications were used for many conditions, but considerably more were considered necessary in some cases. It was recommended that the instrument be used more gently on bony areas than on fleshy ones, and also in warmer climates, the sun making the skin more susceptible to treatment than colder zones. The area of skin being treated was then annointed with the irritant oil using a "pen-feather or camel-hair pencil". This was



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said to produce a rash resembling millet seed in appearance, the virulence and size depending on the quantity of unsound matter in the body. The skin then turned a healthy red colour and the patient, after feeling a crawling sensation in the skin, would notice a more general activity of the whole body and an overall warmth. Healing was assisted by opening the pustules on the second or third day, and a "rubbing skin brush" could be used to relieve the itching. If the disease was not cured after ten days, the treatment was repeated a little more vigorously, and if necessary repeated every ten days until the desired result was obtained. It was considered to be very unusual for this period to extend to more than six months. The treatment was repeated at intervals of ten days because this was believed to be the length of time that the oil would keep the punctures open.

After use, the lebenswecker was wiped on a dry feather, and then brushed with another feather which had been dipped in the oil. If used on several patients, between each treatment the needles were dipped in a solution of Chloride of Lime and Sulphuric Acid to neutralise any infections remaining on them before being dried and oiled. It must be stressed that this system was not related to acupuncture in any way, but was based on the observed action of the gnats' stings.

Baunscheidt believed that, by varying the areas in which it was used and the number and strength of the applications, virtually any disease could be treated successfully by this method.
He states:

> *"The Lebenswecker contains far more healing powers than all your learned recipes put together; it represents by itself alone a whole apothecary's shop because it operates as an exsudor and animator and regulates the circulation of the blood, and principally assists in those cases where the present medical science stands helpless . . . ."*

In the first English edition of his book 'Baunscheidtismus' he gives instructions for the treatment of forty-six "Insignificant diseases" (including yello fever and lockjaw!) and forty-nine "Important cases of disease". In order not to shock his readers, an engraving of the famous sculpture of Venus and Adonis was used to illustrate the different areas recommended for treating the various complaints listed. In some cases the directions are given in great detail, and one suspects that they may have suffered in translation, - for example:

> *"In the case of toothache the instrument must be applied several times to the nape of the neck, and between the shoulders, and then close behind the ear (about opposite the middle of it) and on the side of the head where the pain is seated, it must be jerked in, once or twice, according to the violence, towards midnight, as if they were the last dying struggles of the malady before its death, and the evil is entirely removed."*

Later Baunscheidt adds the comment -

> *". . . after my observations I dare make the assertion, that if the toothache has lasted longer than eight days, either a nervous suffering arises out of the rheumatic evil which is not subdued, the body filled thoroughly with rheumatism, in both cases a longer application of the cure is needful."*

In many other cases the instructions are much more concise.

Other examples of those diseases which he considered insignificant were: fluxio-rheumatic pains in the neck, arms, legs, shoulders or between the shoulders, ear-aches, head-ache, stiff joints, spasms of the calves, sleeplessness, worms, hypochondria (hysterics of women), removal of marks resulting from burns, baldness, scrofula, tetters (eczema), internal scab (a bladder complaint), measles, nettle rash, influenza, hooping cough, nose catarrh and bladder catarrh, colic, disorders of the stomach, incubus (nightmares), gastric fever, jaundice, styes and inflammation of the eyes, intermitting fever, morbid action of the liver, relaxed or obdurate spleen, and sea-sickness.

Among the important diseases were: inflammation of the brain (encaphalitis), bilious fever, mental debility (mania), asthma, epilepsy, rickets, obesity, putrid fever, bad looking pale complexion (!), paralysis after apoplexy, loss of hearing, green sickness, cholera morbus, gout, pleuritis, pneumonia, tape worm, (here we are assured that after vigorous treatment "the disgusted visitor will soon leave the apartments of his hitherto unhappy home."), apparent death, haemorhoids (difficult to cure when caused by sexual intercourse), scarlet fever, inflammation and consumption of the Adam's apple, sperm-loss pollutions, cancer goitre, apoplexy, nightsleepwalking, dropsy, consumption, diabetes, chilblains, small pox, venereal disease, amaurosis (loss of sight), and gangrene.

In certain cases, such as scrofula, tetters, epilepsy of long standing, green sickness, confirmed exsuding gout, consumption, consumption, diabetes and apparent death, it was recommended that an experienced Baunscheidtist (any physician who had conscientiously embraced this method of curing disease) be consulted. Baunscheidt himself seems to have shared with Edgar Alan Poe a morbid fascination in the possibility of burial before death, and suggested that the authorities should provide at least one Lebenswecker for each village and for each quarter of every town to guard against the chance of this occurring. he did not claim to be able to cure congenital disabilities, and had reservations about the chances of curing advanced cancer, but although he had no opportunity to test the Lebenswecker on hydrophobia, he was sure that treatment would be successful.

He claimed that he had operated on more than 25,000 people, obtaining perfect results in seven-eighths of the cases and partial success in the eighth.

Perhaps it is not really surprising that the system met with a good deal of opposition from the medical profession, a fact which he attributed to his being a layman. However, in spite of this, it was widely adopted, and proved to be a commercial success, as is evidenced by the fact that his book 'Baunscheidtismus', in which the system is described in detail, ran to ten German editions, as well as several published in England and America. In addition, at least two Americans considered it worth their while to patent improvements on the original Lebenswecker. Alfred Stauch of Philadelphia (U.S. Patent No. 28697, 1860) had the needles surrounded by a brush, to which the oil could be applied before use, and an additional spring to extract the needles from the skin after penetration of the needles was controlled by a screw on the handle. In addition, the needles passed through a



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leather diaphragm which could be saturated with oil before use.

The Lebenswecker was demonstrated at the Great Exhibition in London in 1851, being sold at a price of one guinea (£1.05), including an instruction book and bottle of oil. It would appear that they were still in use in England towards the end of the 19th century as an 1893 catalogue of Evans and Wormull illustrates a counter-irritation instrument (trade price five shillings [25p] which appears to be identical with the Lebenswecker. However, I have not been able to find any similar instruments listed after this date. Of course, by the end of the 19th Century counter-irritation was rapidly losing ground as a method of curing disease, so we consider Baunscheidt to have been fortunate to have achieved success just as this type of treatment was coming to an end after so many centuries of habitual use. His death in 1860 ensured that he did not see his prediction refuted by the decline and final demise of his system of medicine. Had he done so, I have no doubt that he would have been shocked and distressed by the rapidity with which his discovery passed into obscurity. One cannot help but wonder how many of today's fashionable methods of treatment will stand the test of time.

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# The Pharmaceutical Society in Scotland

**By James Chilton**

We all know of a meeting of English chemists and druggists in a London tavern in 1841 which led to the formation of the Pharmaceutical Society of Great Britain. The use of"Great Britain" was somewhat premature since, although membership was always open to the Scots, the news of the formation of the Society did not immediately set the heather on fire north of the Border, and the 700 founder members of the Society included only nine Scots, eight from Edinburgh and one across the Forth from Dunfermline. The west and north of Scotland were unrepresented.

There seem to be two main reasons for this lack of interest. Firstly, in the 1840s London was very remote from Scotland. The railway to Edinburgh had yet to be completed, and indeed the Physic Garden occupied what is now Number 11 platform at Waverley Station. The single coach journey to London took longer than is now required to travel from Edinburgh to Australia and back; it must have been cold and uncomfortable and cost more in real terms than the present-day train fare to London.

A second reason is that the quarrel between the chemists and druggists and the apothecaries, which was the main stimulus for the foundation of the Pharmaceutical Society, found no echoes in Scotland for the very good reason that the Scottish pharmacists, like their continental colleagues, were themselves the apothecaries, and had had their own Association of Druggist Apothecaries since 1785. The early history of pharmacy in Scotland, which was quite distinct from that south of the Border, has been ably chronicled by the late Charles Gray Drummond. Briefly, however, apothecaries in Scotland did not generally practice medicine, which was a prerogative jealously guarded by the Royal College of Physicians of Edinburgh. As a *quid pro quo* the physicians left dispensing to the apothecaries, a division of labour which carries its beneficial legacy to the present day; Scotland is still mercifully free of the "dispensing doctor" disputes which so often mar relations between the medical and pharmaceutical professions elsewhere in Britain, and has found no need for rural dispensing committees.

The small number of early Scottish members of the Society was offset by their keenness, and, despite the formidable problems of travel, we see Scottish pharmacists presenting papers to London evening meetings during the first decade. The names of J.F. Macfarlan and the brothers Thomas and Henry Smith are still familiar from the manufacturing houses which they founded, and Duncan and Flockhart were both members of the exclusive group of Scottish founder members. The first Secretary, John Mackay, while not a manufacturing chemist, also presented scientific papers. In fact, Edinburgh in the mid-19th Century was a thriving centre of the pharmaceutical industry. This was no doubt partly a result of the ferment of scientific interest in post-enlightenment Edinburgh - though at a more prosaic level it was probably helped by the lower excise duty on alcohol which Scotland at that time enjoyed.

Interest in the Society in Scotland was for a while the exclusive preserve of a few Edinburgh enthusiasts and by 1850 their number, including associates, was still less then forty, almost all from the Lothians. The first change occured when the Society proposed a parliamentary Bill "for regulating the qualification of Chemists and Druggists in England and Wales", which included a qualifying examination for new entrants. It is not clear whether the omission of Scotland was intentional or inadvertent, but the Scots who

After-dinner talk to the Conference of the British Society for the History of Pharmacy on April 22, 1989.



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traditionally had a high regard for education, were inevitably provoked into asking why they had left out. The Council presumably had no strong feelings in the matter and happily acceded to a Scottish request for inclusion in the proposed Bill.

So far, so good, until the Scots realised that the entrance examinations were to be held only at 17 Bloomsbury Square. The railway to Edinburgh and to Glasgow was now complete, but it was still a slow and trying journey. The Forth and Tay estuaries were as yet unbridged and for candidates from the north it was a long trip even to Edinburgh.

Representations were accordingly made to Council in 1851 for the establishment of a Board of Examiners in Scotland. These came independently from Edinburgh itself and from the Aberdeen Society of Chemists and Druggists (which incidentally pre-dated the London Society). Council, while generally sympathetic to the requests, was divided on their implementation. While Council naturally wished to keep all the reins in its own hands, it was no doubt realistic enough to see that too overt a central control could tempt the Scots into the formation of their own independent organisation, as indeed had already happened in other professions. A happy comprise was reached whereby the Scottish Board of Examiners was nominated by a specially-convened meeting of Scottish members, their names being sent to Council for approval and formal appointment.

Negotiations were completed with commendable speed, and the first Scottish Board of Examiners was constituted in 1852, only six months after the first request had been received.

The establishment of a Scottish Board of Examiners acted as a nucleus for further development, and a meeting at 6 York Place on April 15, 1852 led to the formation of a North British Branch of the Society, which was the forerunner of its present Scottish Department. One of its first objectives was the establishment of a series of Evening Scientific Meetings, which have continued without a break to the present day. The list of lecturers includes all the great names in pharmacy and medicine in Scotland, as well as speakers on such general topics as photography, in its infancy in 1854, and electric lighting, a demonstration of which was "much applauded" and may well have been the first in Edinburgh.

The North British Branch occupied a variety of rented accommodation in the new town of Edinburgh – which then really was quite new – before buying its own house at 36 York Place in 1884 at a cost of £1900. Up to that time there was no permanent staff and the secretaryship was honorary. The first Secretary John Mackay, did not live to see the occupancy of 36 York Place, which was undertaken by his successor, Peter McEwen. Peter McEwen served, however, for only four years, being succeeded by J. Rutherford Hill who was Secretary for fifty years. It would take an entire lecture to do justice to the career of Rutherford Hill, who was a giant amongst his contemporaries in pharmacy, not only in Scotland. Similarly, I must acknowledge the valuable contributions of Joe Tait, David McCall and George Macmorran. The present Secretary, Gordon Jefferson, who followed me, is only the eighth in succession.

The entrance examination, initially little more than a *viva voce,* developed over the years with the introduction of written and practical papers and the number of candidates increased, coming not only from Scotland but from the north and even the south of England. At the heyday of the examination more than five hundred aspiring pharmacists crossed the threshold of 36 York Place each year. Accommodation in the original house soon became inadequate and extra space was found, first by expanding into the garden at the rear, then by buying adjacent properties at Number 34 and 38.

Secretaries to the Society's Scottish Department were much involved in representing the interests of proprietor pharmacists in the health service, and following the 1911 National Health Insurance Act, the redoubtable Mr. Hill succeeded in obtaining somewhat superior conditions of service for Scottish contractors. This led to the formation or a separate negotiating body for Scotland of which Mr. Hill was appointed secretary, and which was the forerunner of the present Pharmaceutical General Council (Scotland). The tradition of joint secretaryship continued until in 1948 Dr. McCall successfully led the Scottish contractors into the National Health Service. Only on Dr. McCall's retirement were separate Secretaries appointed for General Council and the Society and the two organisations continue to work in close and neighbourly co-operation.

With the end of the Society's examinations in 1969, the suite of examination laboratories became redundant. Fortunately for ourselves, however, the institution of licensing for medicinal products following the 1968 Medicines Act required an independent body to conduct analyses. The Society's Edinburgh laboratories, with a nucleus of expert staff, provided a solution, and the former examination laboratories, suitably adapted, are now even busier than ever.

A second factor was the NHS (Scotland) Act 1972 which devolved much of the organisation of the Health Service to the Scottish Home and Health Department and Health Boards. Council wisely decided to delegate conmmunication with SHHD to its Scottish Department, subject to broad conformity with Council policy. This had worked well for all concerned, remuneration and terms of service chemist contractors being left to General Council.

While there have been inevitable differences of opinion between the Scottish Executive and Council over a period of almost 140 years, diplomacy and good sense on both sides have prevailed, and I do not sense any strong feeling amongst Scottish pharmacists for a separate Society for Scotland. We live, however, in a changing world, and if Scotland were to achieve a greater measure of political independence in the future, this would have inevitable repercussions throughout the professions, including out own. Whatever happens, I am sure that pharmacy in Scotland will continue to have a distinctive and effective voice in its own affairs, whether or not in conjunction with our colleagues south of the Border.



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# Early Pharmaceutical Education in Edinburgh

**By A.W. Patterson**

It chanced that the Guild of Barber-Surgeons of Edinburgh, incorporated in 1506 by James 4th, King of Scots, had been reduced by the mid 1600s to only eight members and an infusion of new blood was called for rather than further blood-letting, which was the traditional practice in those days.

The surgeons therefore invited two prominent Edinburgh apothecaries to collaborate with them. This was a very perspicacious move on the part of the surgeons as later developments were to prove.

One of the apothecaries approached by the surgeons was James Borthwick (1615-1675). He had seen army service abroad as a 'surgeon' in company with Alexander Pennycuik, chirurgeon, who was by this time Deacon of the Surgeons' Guild.

Borthwick's experience apparently waived the requirement to serve an apprenticeship with an Edinburgh surgeon before admittance to the Guild. His knowledge and skill in this branch of his professional accomplishments enabled him to pass the surgeons' examination with no difficulty and led to him being appointed by the Guild in 1645 to teach anatomy, in their own words for "dissecting of anatomie for the farder instruction of prentissis and servands". Thus Borthwick became the first regular teacher of anatomy in Edinburgh.

This association of the surgeons and the apothecaries Borthwick and his colleague Kincaid proved fruitful and in 1657 the Incorporation of Surgeon - Apothecaries of Edinburgh was established.

Entrants were required to serve an apprenticeship of five years, including attendance at instruction in the Physick Garden. This Garden had been established the previous year in 1656 by the surgeons in which to grow medicinal plants and herbs and to provide for the training of the apprentices who were also to be taught the "airt of pharmacie" by Borthwick and Kincaid.

Examinations, mainly oral, were held as was "onlie proper for the tryall of entrants in the knowledge of plants, indispensable necessar to the profession of ane apothecar". The 'herbals' of the period would be used in the instruction of the apprentices in addition to handling the living plants in the Physick Garden.

The outcome of the association between the surgeons and the apothecaries had at least one benefit for the general public. The surgeons learned some medicine and pharmacy from the apothecaries who in turn learned some surgery.

As the practitioners of this Guild spread further afield over south east Scotland they became virtually the general medical practitioners of their day, accessible to those of modest means, as distinct from the physicians who were concentrated in the city and whom only the well to do could afford to consult.

The almost constant wars between Scotland and England meant that a Scot desiring an education could not go to Oxford or Cambridge but had to go to the continent, France and Holland being specially favoured. This kept educated Scots in touch with mainstream continental thought and education. Medical education was somewhat unstructured at the universities and anyone interested, and willing to pay the fee, could attend a few lectures and demonstrations. Many Scots, as part of their education, did so and on returning home provided a source of sketchy medical knowledge and assistance in the local community. However, in time friction arose between the apothecaries and the surgeons.

The reason was that the surgeons had become the dominant partners in the Guild and not all apothecaries accepted this situation very willingly, particularly those whose chief interest lay in pharmacy rather than in surgery, because the Guild of Surgeon - Apothecaries had the authority to enter the shop of an apothecary, examine the drugs and throw out any that were considered unsatisfactory. So, once again a more acceptable liaison became available, with the physicians this time.

The arrangements that the apothecaries were obliged to accept at this time, however, meant that now the physicians also had authority, twice a year, to examine the drugs in an apothecary's shop, but there had to be a member of the Guild of Surgeon - Apothecaries present.

So, a rather uneasy relationship existed between the three professions at this time with both the physicians and the surgeons continuing to endeavour to exert control over the apothecaries.

The Royal College of Physicians established in 1681 lost no time in setting up a committee to prepare a Pharmacopoeia with the object of exerting their authority in the control of drugs in the city and to control, and if possible limit or at least moderate the increasing influence of the apothecaries some of whom were town councillors. Borthwick for example had been a Burgess of the city of Edinburgh.

The first edition of the pharmacopoeia was intended to be in 1683 but, due to much wrangling within the College, the first edition did not appear until 1699. This was called the Edinburgh Pharmacopoeia.

There were a further 13 editions of the Edinburgh Pharmacopoeia in all and all in Latin except the last two, in 1839 and 1841 which were in English.

The Edinburgh Pharmacopoeia soon became the standard throughout Scotland.

The early editions maintained much of the ludicrous polypharmacy of the past but the Age of Enlightenment now began to influence medical thinking in Edinburgh and by the 1756 edition much rubbish had been expunged though there still remained, even in subsequent editions, items of dubious merit.

The next edition was in 1774, a date of particular interest to us in that there is extant in the National Library of Scotland a copy of Professor William

A Paper presented at the Spring Conference of the British Society for the History of Pharmacy in Edinburgh April 1989



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Cullen's lecture notes in pharmacy dated about the same time.

Cullen was the leading clinician of the latter half of the 18th Century. He was also a notably successful lecturer and was the first to lecture in the vernacular, not in Latin as had been the time honoured custom.

Two years after Cullen had written the lecture notes on pharmacy, in 1776, the Royal Public Dispensary was established in Edinburgh by Andrew Duncan Senior, Professor of the Institutes of Medicine and an appothecary to the Dispensary was appointed.

This Dispensary was supported by charity and provided three things.

First, medical assistance and medicines for the sick poor. Secondly, training for medical students and third, training in pharmacy for both medical and pharmacy students. More of this later, however.

Cullen's break with lecturing in Latin was in keeping with, and supported, a movement already in progress to produce books in the vernacular. The so called 'Dispensatories' originated as straightforward translations of the various Latin Pharmacopoeias of the time. Soon however these books began to include notes on pharmacy, materia medica and therapeutics. These Dispensatories could be described as the Pharmaceutical Codex, Martindale and a textbook of pharmacy all rolled into one, bearing in mind of course the limited extent of knowledge available at this period.

Dr. W. Lewis of Edinburgh's first edition of his Edinburgh Dispensatory was published in 1748 and there were subsequent editions. The second edition of his new and enlarged Edinburgh New Dispensatory in 1789 contained . .

> "I. The elements of pharmaceutical chemistry. II. The Materia Medica. III. The Pharmaceutical Preparations and Medical Compositions of the new edition of the London (1788) and the Edinburgh (1783) Pharmacopoeias. Together with the addition of those formulae from the best Foreign Pharmacopoeias, Which are held in highest Esteem in other parts of Europe.
>
> The whole interspersed with
> Practical Cautions and Observations. "

Although published in Edinburgh this book was printed in London by a printer whose intriguing address was "at Dr Cullen's Head, opposite Somerset Place, Strand, London.

M,DCC,LXXXIX "

Lewis's Edinburgh Dispensatories attained a considerable reputation and circulation and was published on the continent in translation, notably German.

The Royal College of Surgeons was established in 1778 making it possible for many of the Apothecaries to break with the Surgeons and by 1785 The Society of Druggist Apothecaries of Edinburgh was founded.

However, not all the apothecaries with a particular interest in pharmaceutical business broke contact with the Guild of Surgeon - Apothecaries and this had interesting developments in the early nineteenth century.

The founder of the pharmaceutical manufacturing firm of J.F. Macfarlan and his partner were both surgeons. Also Thomas and Henry Smith who founded T & H Smith, manufacturers of medicinal alkaloids, were both surgeons and Andrew Flockhart of Duncan Flockhart & Co. was a surgeon. Macfarlan developed opium alkaloids and Duncan Flockhart anaesthetics especially chloroform.

Developments in medical, surgical and pharmaceutical science caused the paths of these surgeon - apothecaries to diverge and thus finally the association of surgeons and apothecaries ended around the middle of the 19th Century.

The Articles of Association of the Society of Druggist Apothecaries is in the possession of the Scottish Department of the Royal Pharmaceutical Society at 36 York Place in Edinburgh.

It is interesting that the constitution and objects of this Society were almost identical with those adopted in the next century by the Pharmaceutical Society of Great Britain.

One of the founders of the Society of Druggist Apothecaries of Edinburgh was a certain James Gardner, whose son, also a James Gardner was one of the first nine members of the Pharmaceautical Society of Great Britain in Scotland in 1841. Eight of the nine members were resident in Edinburgh.

Thus, as far as Edinburgh is concerned, it could be said that the Pharmaceutical Society is in a sense in direct succession to the Society of Druggist Apothecaries of Edinburgh and thus in succession to their predecessors right back to the 'preintesses and servands' of the 17th Century.

In 1852 the North British Branch, now known as the Scottish Department, of the Pharmaceutical Society was formed and organised a Library and Museum and arranged classes in chemistry for the benefit of apprentices. Long shop hours, distance and travelling time were inhibiting factors but Edinburgh apprentices were fortunate since in 1850 the Edinburgh pharmacists had agreed that freedom to attend lectures should be written into the Indentures. This enabled apprentices to leave work in good time to attend a lecture course.

Also in 1852 a Scottish Board of Examiners was established in Edinburgh. At the time the Society conducted three examinations. Passing the MAJOR examination bestowed full Membership of the Society. Passing the MINOR examination gave the status of Associate of the Society but not full membership. A pass in the CLASSICAL or ENTRANCE examination in Latin and Arithmetic was required for registration as an Apprentice.

The Pharmacy and Poisons Act of 1868 made it compulsory to pass the MINOR examination in order to be Registered with the Pharmaceutical Society as a Chemist and Druggist and thus gain statutory authority to be in control of a pharmacy . . in terms of the Act . . to keep open shop . .

The demand for pharmaceutical education consequently increased and local associations of Chemists and Druggists arranged lectures for apprentices as best they could but with very varing success. A number of so called "Private Schools" developed in various towns up and down the country and Edinburgh had at least two.



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Consequent upon the 1868 Act Privy Council Visitors were appointed to the Society's examinations. The first Privy Council Visitor in Scotland was Sir Robert Christison, Professor of Materia Medica in the University of Edinburgh. The name of Christison was familiar to Edinburgh Druggists and their apprentices because Christison's Dispensatory, published in 1842, had become an indispensable book in every surgery and pharmacy of the period.

The author of this paper, a century later remembers making and selling Christison's Pills containing colocynth and hyoscyamus for the encouragement of the reluctant bowel.

Christison's Dispensatory was based on the previous work of the Duncans, father and son. The father Professor Andrew Duncan founded the Royal Public Dispensary in 1776. His son Dr Andrew Duncan Junior had published his Edinburgh New Dispensatory in 1803. He also contributed substantially to the pharmacy of several of the Edinburgh Pharmacopeias. His Dispensatory went through several editions.

In 1883 some reorganisation of the teaching of pharmacy was carried out and a School of Pharmacy was established with its own principal, who was also the Apothecary to the Royal Public Dispensary. The first principal was J. Rutherford Hill who became a recognised lecturer to the University of Edinburgh in Materia Medica.

Hill only stayed in the post for three years being succeeded by one Mr William Duncan who was Principal of the School of Pharmacy until 1925. He served in this post with great success and indeed, the school became known to several generations of Chemists and Druggists as simply 'Duncan's'. The Duncan Memorial Medal & Prize was established to commemorate this commendable man and also the old School of Pharmacy.

In 1886 Rutherford Hill became Secretary to the then North British Branch of the Pharmaceutical Society of Great Britain in Edinburgh, a post he occupied with singular distinction for fifty years, retiring in 1936.

Hill's successor as Secretary was Dr Joseph Tait who had originally qualified as a Chemist & Druggist in 1900 after studying at both Heriot-Watt College and the Royal Public Dispensary School of Pharmacy.

At this time Heriot-Watt College could offer Chemistry and Physics lectures and practical work and probably Botany too at evening classes while the Royal Public Dispensary School of Pharmacy would offer full time study over three to six months or so in preparation for the Chemist & Druggist Examination. The subjects would be materia medica and other pharmaceutical studies, especially botany and chemistry to the standard required for the C & D Examination.

Before proceeding further it is necessary to record a great disappointment in pharmaceutical education in Edinburgh in the early 1900s when both Edinburgh and Glasgow Universities submitted ordinances to Parliament and the Privy Council.

The Edinburgh ordinance, which was for the degree of Bachelor of Pharmacy in the Faculty of Medicine, was not approved as the General Medical Council opposed it on the grounds that a degree in pharmacy in the Faculty of Medicine was contrary to the policy of the Medical Acts. The Glasgow Ordinance, which was for the degree of Bachelor of Science in Pharmacy was approved in 1907.

One cannot but speculate on what would have been the outcome in Edinburgh if a degree in the Faculty of Science had been sought, as in Glasgow, rather than in the Faculty of Medicine.

Sadly, therefore, in a few weeks after the presentation of this paper the Department of Pharmacy at Heriot-Watt University will cease to exist, thus breaking the Edinburgh tradition of education to professional level in the 'airt of pharmacie' extending back over some 350 years.

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## Books Received

**Justus von Liebig und Julius Eugen Schlossberger** in ihren Briefen von 1844-1860. Fritz Hesse and Emil Heuser. Bionomica-Verlag Manheim. 1988. pp 83. ISBN 3-88208-013-2

A study of the life of the famous chemist Liebig stimulated the publication of this series of letters between Julius Eugen Schlossberger (1819-1860) and Justus von Liebig (1803- 1873).

Schlossberger commenced his studies with an apothecary in Stuttgart, graduated in medicine and devoted his illness bedogged life to the applications of chemistry in physiology, pathology and agriculture. An industrious man, Schlossberger published abundantly and became the first professor of physiological chemistry. He made no great discoveries yet he laid the foundations of the teaching of biochemistry.

The authors, a physician (Hesse) and a chemist (Heusser), present in German a brief biography of von Liebig and a much longer description of his student and friend's short life. Thirty-three letters are reproduced in modern script together with an invitation to a Thé Dansant in 1844, a letter of condolence to Frau Professor M. Schlossberger and a report on Schlossberger's work in Edinburgh (1844-1845). Painstaking study of the original handwritten scripts with careful annotation, referencing and cross-referencing of the letters permits a fuller understanding of their real significance.

This scholarly publication is valuable because it reveals the topics of the time e.g. urinalysis, manures, sausage poisoning, general biochemistry, etc., as well as frequent references to gifts of cigars, thus focussing attention on many aspects of the sincere friendship between mentor and pupil.

**William E. Court.**

**Medical Trade Marks 1800-1880.** Roger Price and Frazer Swift. £10.95. Science Museum, London.

Unless extreme care is taken when using this spiral bound publication it is likely to show early signs of constant use. It is one of those books that raise the question "why wasn't it done before".

The catalogue lists the marks published in the *Trade Marks Journal.*

The authors have not restricted themselves to merely including proprietory medicines or materia medica. In the first part of the catalogue they have listed marks on surgical instruments, invalid foods, spectacles and vermicides. Toilet preparations are also included if some "medical value" was claimed.

The second section reproduces the marks. Regrettably the original material appears not to have reproduced well in many cases. The third section is an alphabetical list of applicants.

A great advantage of the catalogue is the accessibility of the information that has been garnered from the *Trade Marks Journal* - the regret is that the "volume ends at 1880".





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# PHARMACEUTICAL HISTORIAN

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Contributions to the Editor: Arthur Wright F.R. Pharm S., D.B.A.: 36 York Place: Edinburgh: EH1 3HU

## Contents



## Diary Dates

**September 13**
**British Pharmaceutical Conference**
Keele University
History of Pharmacy Session 2pm.

Mr. Robert Copeland - "Three Cheers for Blue and White: the best for the Chamber".

An outline of 19th century transfer-printed pottery with special reference to the hygienic uses of glazed earthenware decorated with blue patterns.

Robert Copeland is a great great grandson of Josiah Spode's partner, William Copeland. A master potter and now the Historical Consultant of Spode Ltd. with an international reputation as author and lecturer.

Mr. Martin Shakespeare on "Bates and Hunt at Blists Hill. The Story of an Historical Project".

Martin Shakespeare qualified as a pharmacist in 1981 and has since gained diplomas in crop protection, and agricultural and veterinary pharmacy. Between 1982 and 1987 he was involved in a project for the Ironbridge Gorge Museum.

**November 8**

Rev. Gordon C. Taylor, Rector St. Giles in the Fields, London. "The Bloomsbury Dispensary".

The Reverend Taylor, a naval historian, has been Rector of St. Giles since January 1949, and has held the living longer than any of his predecessors. He is a trustee of the charity -"The Bloomsbury Dispensary - for the Sick Poor", which since its inception has continued throughout a period of great social changes.

### 1990

**February 14**

Nigel Tallis, Assistant Museum Officer, RPSGB, London. "The Historic Photographic Collection of the Royal Pharmaceutical Society of Great Britain".

Mr. Tallis and Kate Arnold Foster are authors of the recently published book "The Bruising Apothecary" - A catalogue of the carricature collection of the Museum of the RPSGB.

**March 13**

Dr. Roy Porter on "The Corbyn Papers".

## An Appreciation

Again members enjoyed the hospitality of the Squibb organisation at the Foundation Lecture 1989, which it has supported since its inception. It was therefore appropriate that the subject was Dr. E.R. Squibb, the founder of the company, and the lecturer, Dr. Klaus Florey, who was the senior scientific adviser at the Squibb Institute for Medical Research at New Brunswick, U.S.A. The organisation has also sponsored this issue of the *Pharmaceutical Historian.*

1848

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**Foundation Lecture 1989**

# Edward Robinson Squibb – The Man And His Company*

**By Klaus Florey**

Edward Robinson Squibb was born in Wilmington, Delaware on July 4, 1819. He wanted to become a physician. Since his family was poor, he had to earn the necessary funds for medical school first. When 18, he was apprenticed for five years to a druggist in Philadelphia and acquired his lifelong interest in drugs and, more specifically, in the purity of drugs. In 1852, when 23, he matriculated at Jefferson Medical College in Philadelphia and received his M.D. in 1845. For two years he practised medicine in Philadelphia, he wanted to see something of the world and joined the United States Navy as an assistant surgeon. Since Dr. Squibb was a quaker, his relatives were unhappy about his decision which resulted in him being thrown out of his Quaker congregation.

He first served as Medical Officer on the U.S. frigate "Perry" in the Carribbean, and then was assigned to the "Cumberland" in the Mediterranean. He kept a very readable diary – a lifelong habit –which showed that he made good use of his port stays to explore the rich treasures of antiquity, but he also observed the rough life on board.

When he returned to the States in 1851, he had enough of shipboard life and was glad to obtain an appointment as assistant director of a pharmaceutical laboratory in the Brooklyn Naval Yard where he could indulge his interest in drug quality. While serving aboard ship, Dr. Squibb had observed the poor quality of many of the medical supplies furnished to the navy. These were bought upon the contract system, and from the lowest bidders. Through the efforts of Dr. Squibb and other officers, however, Congress was induced to make an exception in the case of medical supplies and gunpowder, and "Quality first and price second" became the rule of the Department.

In 1852 he married a lovely young lady and over the years they had two sons and two daughters, but all was not sweetness in his domestic life, since his wife suffered from epilepsy and needed a good deal of care.

The rather low Navy pay was barely adequate to support his growing family and, I think, was the strongest inducement to start a drug firm of his own in 1858. He bought a building in Brooklyn. An important undertaking was the manufacture of ether, but in December 1858 there was a disastrous fire.

Dr. Squibb's face and hands were badly burned in attempting to save his books and diaries. He recovered but was badly scarred. His eyelids were everted permanently, and for many years he was compelled to wear protectors when out in the open air during the winter season. But his spirit was not broken. With the help of friends he started again and soon prospered, helped no doubt by the demand for his drugs during the Civil War.

Dr. Squibb was very civic minded. He was active in the affairs of the American Medical and Pharmaceutical Associations where he had various posts. He also helped to found the new York section of the American Chemical Society. He had no formal training in pharmacy or chemistry. Nevertheless, he was not only a competent physician, but also an outstanding pharmacist and an excellent analytical chemist.

With his great interest in drug quality, it is not surprising that the affairs of the United States Pharmacopoeia drew him like a magnet. In 1890 he gave an address to the American Medical Association about the United States Pharmacopoeia in which he said:- "Originating in 1820, it has been regularly revised every ten years. It has been my good fortune to have participated in four of the revisions and to have served in three. The original construction of the decennial convention was by delegates not exceeding three in number from Medical Societies and Colleges, and this construction held good up to the convention of 1850, when for the first time delegates from Colleges of Pharmacy were invited.
This important step of progress amounted to a reformation in the work and has so much extended and improved the work that the advent of pharmacy must be regarded as the most important step taken in the sixty years of progress."

Dr. Squibb commented on preparation and assay of nearly all the drugs found in the USP. One of the drugs which particularly interested him throughout his life was opium. He constantly worked on improvements of the assay. For instance, in 1869 he wrote a USP Committee report in which he had the following to say:- "Opium requires a far better definition, a good simple process for assay, and a maximum limitation, the latter because opium of more than double the ordinary morphia strength has been imported to avoid duties."

Apparently in those days, the customs duty for import of opium was based on its weight. To avoid this duty, importers enriched morphine in the opium before sending it to the United States. Since Dr. Squibb was very skilled in the assay of opium, he was frequently used as a referee by the Customs Service.

Here I want to digress for a moment. Dr. Squibb was a very prolific writer, and in 1882 he embarked on

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* Dr. Klaus Florey, Senior Scientific Advisor (ret'd.), The Squibb Institute for Medical Research, New Brunswick, NJ, 08903 USA, dedicated the lecture given on March 15, 1989 to the memory of C.A. Johnson, CBE, BPharm, Hon DSc, FPS, the late Scientific Director of the British Pharmacopoeia.



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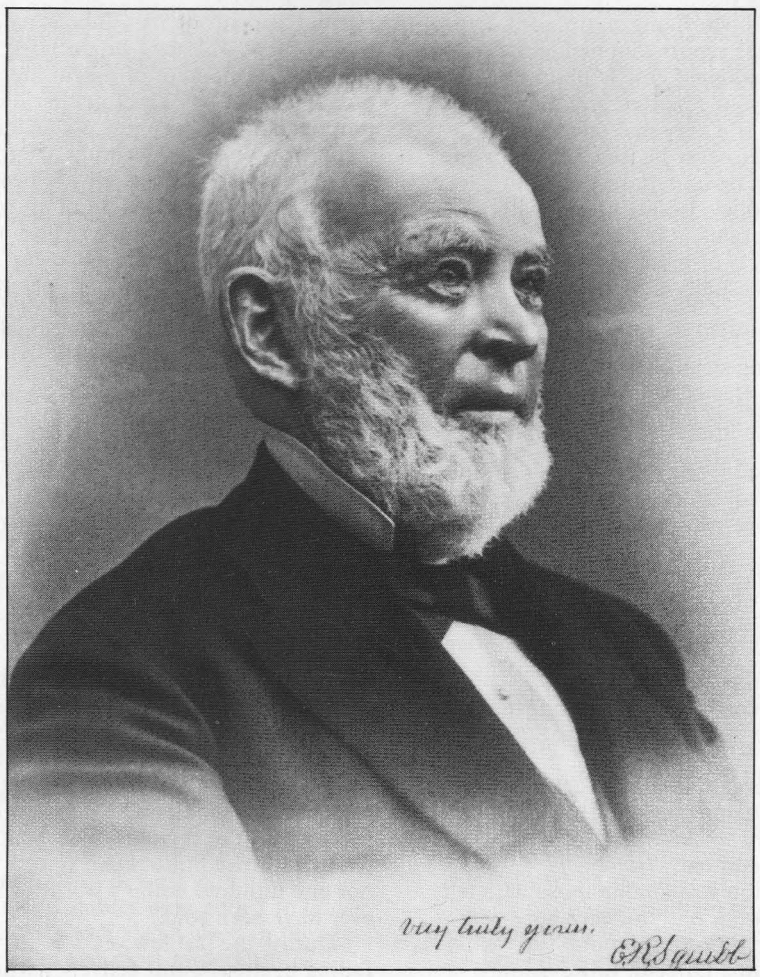


what he called *"An Ephemeris"*, a private journal which he gave away free to his customers, and in which he expressed his ideas and experiments. He also published extensively in professional journals. He wrote over one hundred papers, comprising about 1400 pages, during his lifetime, mostly in the *American Journal of Pharmacy* and the *Proceedings of the American Pharmaceutical Association.* His collected papers will be published by Squibb Corporation later this year.

The first article in his *Ephemeris* – a very long one – is entitled: "Strength of Opium and the Pharmacopoeia". In the article Dr. Squibb refers to the assay, developed by a German chemistry professor named Flückiger. As any analyst worth his salt, Squibb had to improve the assay, and gave a detailed six-page description. His assay was adopted by USP in 1870 and stayed essentially unchanged for 75 years.

Dr. Squibb advocated the inclusion of powdered opium in the USP, but did not want it standardised, since he thought it might be difficult to differentiate between standardisation and adulteration. He clinched his argument with the following:- "The dose of an opiate varies much from the varying conditions to which it must be adjusted. If patients and their conditions in their reactions with opium were like chemicals in their reactions, then a very definite strength would be necessary. But, unfortunately, this is not the case." Apparently, Dr. Squibb already understood the principles of biopharmaceutics.

The drugs Dr. Squibb's laboratory supplied were mostly of plant or mineral origin. Not until the end of his life were synthetic drugs introduced. For instance, aspirin was not invented until 1897, and the only organics I could find in the USP V of 1873 were ether, chloroform and chloral. The last one is still supplied by Squibb under the name of Noctec.

The tremendous impact ether had on the practice of surgery in the 19th century is hard to imagine today. Ether had special significance for Dr. Squibb because of his accident and its devastating effect on him.

I shuddered when I looked at the official procedure to prepare ether in USP V of 1873: a distillation from a



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sandbath under which an open flame was placed. Dr. Squibb in a USP committee report commented:- "The present arrangement was adopted chiefly upon the advice and experience of your reporter, and he may therefore freely say that it is a very bad one. The preparation of ether should never be undertaken by the pharmacist, and never can be undertaken without nullifying his insurance policy. Beside which, without special adaptation of apparatus, it is dangerous, not only to himself, but which is of more importance, dangerous to all who are casually near and not interested."

To solve the prroblem, Dr. Squibb invented a distillation apparatus, using steam, which was both safe and gave a clean product, free of headache-producing side products. The process was eventually adopted by USP.

There is some 2-4% residual alcohol in ether. In the USP monograph the alcohol is determined by specific gravity, and was worked out very carefully by Dr. Squibb. His measurements were so accurate that they were not changed when specific gravity tables were taken over by the Bureau of Standards. In the present USP XXI there is still a specific gravity specification for ether, indicating 96-98% purity.

Dr. Squibb invented other apparatus and instruments including percolators and an elongated separatory funnel which is still being sold as Squibb Separatory Funnel.

He also gave considerable thought to the function and organisation of the pharmacopoeia. He made some sweeping proposals in 1870, as described in Sonnedecker in his book entitled: *"History of Pharmacy"*: "Dr. E.R. Squibb was among those who felt that the pharmacopoeial work had not kept pace with the times; . . . Some of the proposals Squibb put forward were a paid full-time Director of Revision, revision every 5 years (instead of 10), a pharmacopoeia embracing so much commentary that it need not be supplemented by a dispensatory, plus publication of an inexpensive annual that would provide a semi-official progress report on innovations in drugs, process and equipment."

In this, Dr. Squibb was way ahead of his time. A paid full-time director and staff of USP was employed about 50 years after his proposal, and since 1970 *"Pharmacopoeial Forum"* serves as the additional publication he asked for.

He also considered the desirability of a Universal International Pharmacopoeia but came to the conclusion that, although desirable, it was impractical because medical pracice and drug therapy were so disparate in different parts of the world. Only today the European and International Pharmacopoeias are a beginning in this direction.

He was an active and outspoken proponent for legislation of a pure Food and Drug Act. A bill, drafted by him, was enacted in the States of New York and New Jersey in 1880. However, the Federal Food and Drug Act was not enacted until 1906, six years after his death.

He had also strong ideas about patents and trademarks in *Ephemeris, Volume 1* he declared:-"Squibb never did copyright, trademark or patent any medcine or preparation of any kind. neither did he ever claim any proprietorship in any process or medicine, nor had any secret or proprietary formula or process for anything. On the contrary, he has always been an uncompromising opponent of all proprietorship in medicinal articles, and never has, and probably never will cease from earnestly opposing all forms of copyright and trademark and patent from the mildest form of the manufacture of coated pills up to the aggravated abominations of the patent medicine market."

This, of course, would not do today as company policy! In an area outside medicine, Squibb did own a patent on the manufacture of acetic acid.

Speaking of patent medicines, here also he waged another lifelong crusade. let me quote from an article in *Ephemeris, Volume 1,* where he condemned a concoction called "St. Jacob's Oil": "St. Jacob's Oil appears to be a feeble and badly made aconite liniment, and it consists mainly of water, ether, alcohol, turpentines, and a small portion of aconite with a coloring matter. Its whole function is to make money for the enterprising merchants who own it, and in this it is by no means a delusion or a snare.
Its enormous sale is not only of great service in helping the poor to stay poor, but it also relieves a great many people of their money, who are not poor in anything but common sense, and who take their medicines as they do most of their other deceptions, namely, by being advertised into them, since without advertising not one hundred dollar's worth of St. Jacob's Oil could ever have been sold."

During the last few years of his life, although in failing health, he still actively participated in the affairs of his company which officially he had turned over to his two sons, hence E.R. Squibb & Sons. He died at the age of 80 on October 25, 1900 at his home in Brooklyn.

As Joseph Remington, the great American pharmaceutical educator, remarked in his moving eulogy: "Sterling honesty, and right because it was right, were his guiding principles. He might wound the feelings of some by frank and outspoken condemnation of what he believed wrong, but it was the sin and not the sinner he denounced."

Dr. Squibb was not a brilliant scientist, doing original research. He has to be placed in the ranks of the innovators and entrepreneurs, such as Edison, Bell and Ford who contributed much to the growth of the United States. He belongs to the shapers of American history through his influence in bringing about high standards of drug quality and purity.

And if there is a moral to what I have presented about Dr. Squibb, it is perhaps the following:- Dr. Squibb in his life demonstrated that one can be successfully engaged in commercial enterprise and yet have the highest ethical standards, not to be compromised by commercial considerations.

Let me now turn to the second part of my topic:



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Squibb the Company, and what happened in the 89 years following Dr. Squibb's death. I shall trace the growth of a relatively small pharmaceutical laboratory – the House of Squibb, as it was fondly called – into one of the largest, multinational, research-oriented, pharmaceutical firms. There are many ways to present this, but I would like to focus on Squibb's contibutions of new drugs for the medical armamentorium, since this is the area I know best, having been associated with Squibb R&D for the last 35 years.

When Dr. Squibb died in 1900, his two sons had already been put in charge for a number of years, of course under his watchful eye. The older son, Edward, was an M.D. He wanted to maintain the company according to his father's ideals: small, conservative, ethical and quality oriented. On the other hand, the younger son, Charles, was a businessman, who wanted to advertise and expand into over the counter drugs and toiletries. The two could not see eye to eye so they sold the company in 1905.

It was acquired by Theodore Weicker with the help of the Palmer family. Weicker had come to the United States in 1887 as agent for Merck-Darmstadt and rose to managing partner. He married into the well-to-do Palmer family. At that time Squibb had about one hundred employees and one salesman. From the commercial point of view there was only a well-respected name. Weicker built on this.

One of the important decisions he made was to branch out into biologicals in 1912. He hired a gifted and knowledgeable M.D., John F. Anderson, for that enterprise. Already in 1905 Weicker had purchased a large farm in New Brunswick NJ to make ether, since it had become too hazardous in densely populated Brooklyn. Now barns and stables were added to house the animals, mostly horses and sheep, used in the production of biologicals. The most important biologicals, produced by Squibb over the years, were: Insulin; Diphtheria, Scarlet fever and Tetanus Antitoxins; Gonococcus, Streptococcus, Typhoid, Whooping Cough and Smallpox Vaccines. No doubt, it took quite a bit of ingenuity and effort to produce all these items.

It is interesting to note that Squibb left the biologicals field with the exception of insulin in 1946. The business had not been too profitable, but the main reason probably was the belief that with the advent of antibiotics biologicals had seen their day. In hindsight that proved to be fallacious. Until the advent of penicillin, Squibb also produced arsphenamine and maintained a research project to find a less toxic arsenical.

Squibb also produced such over the counter items as lanolin and aspirin. The company was particularly proud of the purity of its mineral and cod liver oils. I still remember enormous vats in the attic of the Brooklyn plant in which alkalinised water was slowly stirred for days to remove traces of discoloring iron salts to make white milk of magnesia.

Peppermint-flavoured Squibb toothpaste or rather Dental Cream, as it was called, was also based on milk of magnesia. It was never heavily promoted, but around the Second World War there was a lighted advertisement for it on Times Square in New York. Frequently people said, if one owned up to working for Squibb: "Oh yes, you make toothpaste", even long after it was discontinued in the early sixties.

Squibb also went into the vitamin field. I already mentioned cod liver oil. In 1937 the first multivitamin preparation, Vigran, was introduced. Producing a good and stable vitamin tablet poses many problems which were solved by unsung pharmacists in the Squibb laboratories. A great success was Theragran, a therapeutic dose multivitamin, which for quite a few lean years was the largest selling item in the Squibb product list.

Today pharmaceutical manufacturing is unthinkable without quality control. The first quality control chemist at Squibb was hired as early as 1902. Over the years a busy, large and conscientious department evolved with more than 400 employees in the United States alone.

In the mid-thirties Theodore Weicker, then Chairman of the Board, came to the realisation that fundamental research was needed to lead to significant new drug discovery. He, therefore, reached the momentous decision to create the Squibb Institute of Medical Research. Dr. George Harrop, formerly associate professor of medicine at Johns Hopkins University, was engaged, ground was broken in New Brunswick in 1937 and the building was officially opened on October 11, 1939. During the dedication ceremonies Dr. Abraham Flexner, then Director of the Institute for Advanced Study in Princeton of which Einstein was a member at the time, gave a famous lecture on "the usefulness of useless knowledge", an eloquent plea for basic research.

Dr. Harrop was able to attract a number of outstanding scientists. The most brilliant, perhaps, was Dr. Oskar Wintersteiner, an Austrian micro-chemist who had been trained in the laboratory of Nobel Prize winner Fritz Pregl in Graz. In 1929 Wintersteiner had accepted a professorship in the Biochemistry Department of Columbia University where he had been engaged in the isolation of steroid hormones. In 1934 with W.M. Allen he had isolated progesterone from sow's ovaries and in 1935 with J.J. Pfiffner cortisone from beef adrenal glands. Through the years, he received many honours and awards. The most outstanding was his election to the National Academy of Science in 1950, an honour rarely conferred on an industrial scientist.

Wintersteiner joined the Squibb Institute in 1941 and immediately participated in the joint Anglo-American wartime effort to develop penicillin. This story is well known, let me just mention that Dr. H.B. McPhillamy in Wintersteiner's laboratory was the first to obtain crystalline sodium penicillin G, and Mr. Joseph Alicino, a microchemist, trained by Wintersteiner, established the unsuspected presence of sulphur in the penicillin molecule which was of greatest importance for the elucidation of its structure.



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Squibb microbiologists pioneered the deep tank fermentation which made penicillin production practical.

Squibb scientists had also worked on and off on the arrow poison curare, brought to Squibb from South America. In 1945 James Ducher, a Ph.D. student of Wintersteiner's who had joined Wintersteiner's lab at Squibb, succeeded in isolating tubocurarine as the main active alkaloid. He also elucidated its structure. He was greatly aided by an ingenious bio-assay, developed by another Squibb scientist, Horace Holiday, the so-called head drop test. Rabbits have the tendency to keep their heads up, no matter what. Curare, as a muscle relaxant makes them drop the head, and the time elapsed, until this occurs after injecting a dose of curare, can be used for its standardisation. I mention this to emphasise that a good bio-assay is a prerequisite for drug discovery and development.

Dr. Harrop, the first Director of the Squibb Institute for Medical Research, retired in 1943 because of ill health, and was replaced by Dr. James Shannon, a forceful personality who after six years moved on to become Director of the National Institute of Health where he masterminded the tremendous postwar expansion and flowering of this great expansion. While at Squibb Dr. Shannon was greatly interested in a cure for tuberculosis, and considerable effort was spent at Squibb to accomplish this goal. Dr. Harry Yale made isonicotinic hydrazide, now called by its generic name isoniazid, as an intermediate in the synthesis of another compound. Yale submitted it for a test in a strain of mice particularly sensitive to tuberculosis. Isoniazid was found to protect the mice from tuberculosis and is still a very important drug in the treatment of this disease.

The mice assay was called the Rake-Donovick test after the two Squibb scientists who developed it. Dr. Geoffrey Rake was British born. He served in the mid fifties as Medical Director of Squibb. Dr. Richard Donovick was for many years Director of Microbiology. The Squibb team received the prestigious Lasker award for this invention in 1955, the first time industrial scientists had received this award. However, Squibb had to share it with Hoffmann-LaRoche where scientists had made the same discovery independently. It is surprising how often it happens in drug discovery that two or more research groups come up with the same or similar compounds at the same time.

During the late forties Squibb developed a commercial process for streptomycin, as did Merck. In the fifties Squibb pioneered two antifungal antibiotics, nystatin and amphotericin B. The first was originally discovered by two scientists of the New York State Department of Health, Drs Elizabeth Hazen and Rachel Brown. Amophotericin B was isolated from a soil sample at Squibb and is still the most potent systemic agent to fight deep-seated mycoses. Efforts are currently underway to reduce its toxicity by enveloping it in a liposome preparation.

Let me now leave the Institute for a moment and turn to the post-World War II business developments of the company. Theodore Weicker died in 1941 and the reins went to the second generation of the Weickers and Palmers. Again there was dissension, and in 1952 E.R. Squibb & Sons was sold to Olin Mathieson, a conglomerate producing fertilisers, heavy chemicals, firearms and woodproducts. Squibb did not fit too well into this configuration. Also Squibb profits were frequently used to finance other endeavours. So everybody was quite happy when Squibb was spun off in 1968 and the Squibb Corporation was created. The head of this old-new enterprise was then and is now Mr. Richard M. Furlaud.

Although there was already some export business in the pre-World War II years, particularly to South America, world wide expansion began after the end of the war. Squibb started to have a presence in the United Kingdom in 1952 and acquired a pharmaceutical manufacturing plant in Speke near Liverpool. A new plant was opened in Moreton across the Mersey in 1967, housing also an International Development Laboratory. The Laboratory consisted of a pharmaceutical and analytical department, both under the direction of Frank Ridgway. Its main function was to develop dosage forms for the international market. In 1967 a separate laboratory building was dedicated. The medical and business offices are located in Hounslow, south west of London.

Returning to the Squibb Institute and drug development. I joined Squibb in 1954 which was a very exciting time at Squibb, since the brilliant Joseph Fried in Dr. Wintersteiner's department had just made the discovery of the potent adrenocortical 9*a*-halo steroids. Let me give you some background to this discovery. In 1949 Hench and Kendall had discovered the usefulness of cortisone in rheumatoid arthritis, and Merck had developed a multi-step process to make cortisone from desoxycholic acid, recovered from oxbile. While working at Merck for a year in 1949 prior to returning to my doctoral studies, I was assigned to a team hunting for alternate steroid sources which might possess the important 11-oxygen function, which was impossible to introduce synthetically. We worked on yuccas from Mexico and Strophantus seeds from the deepest Africa with not much luck.

While we were thus engaged, microbiologists at Squibb and Upjohn with their newly gained fermentation know-how from antibiotics were successful in introducing the 11*a*- hydroxyl group into the steroid nucleus in very good yield. The Squibb team consisted of the microbiologist David Perlman, later dean of the School of Pharmacy of the University of Wisconsin, and the chemist Josef Fried, now Professor emeritus at the University of Chicago. Unfortunately, the patent went to Upjohn, but Squibb obtained a patent for introducing a 160*a*-hydroxyl group by fermentation which became of importance at a later time.

Steroids with the 11*a*-hydroxyl configuration are biologically inactive, so Fried set out to convert the 11*a* to the 11*b* configuration. The first step was dehydration to a 9-11 double bond, followed by the addition of hydrobromic acid to form a 9-broma--11-hydroxy



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compound. Fried did not know whether the 11 hydroxyl group had the desired 11*b* configuration. He reasoned that if it were the right one, it should have at least some adreno-cortical activity. He submitted it for a bio-test. It was found to be not only as active, but several times as active as hydrocortisone. Fried then quickly made the 9-iodo and -fluoro analogs and found the latter (fludrocortisone acetate) the most potent.

I was then put to work developing a commercial process for fludrocortisone acetate. Scale-up presented some difficulties. One of the problems was that the end product was contaminated with a high-melting rearrangement product from the hydrofluorination reaction. I desperately tried all sorts of solvents to get rid of the so-called high-melter by recrystallization. One morning I opened the refrigerator door and found a beaker with beautiful crystals in a benzene solution. It turned out to be the benzene adduct of fludrocortisone acetate. The impurity had stayed in solution. The problem was solved.

Fludrocortisone acetate was not a commercial success, because it had undesirable sodium retaining properties; however, it is still a boon for patient with Addison's Disease. But most importantly, Fried obtained a generic patent on all 9*a*-halo-11*b*-hydroxyl steroids. For the life of the patent handsome royalties accrued to Squibb from the manufacturers of the many subsequently developed 9*a*-fluoro steroids.

In the mid-fifties chemists at Lederle synthesised another potent corticosteroid: Triamcinolone which had an additional 16*a*-hydroxyl group. It proved almost impossible to make in a reasonable yield by chemical synthesis. As I mentioned above, Squibb held a patent for microbiological 16- hydroxylation. So Lederle approached Squibb, and triamcinolone was jointly developed. The earlier work by Perlman and Fried had paid off. But the best was yet to come. Fried made the 16-17 acetonide for purification and characterisation. Of course, he had it tested biologically, and it turned out to be a potent drug for topical use in all sorts of dermatoses. Thus topical corticosteroids therapy was born in the Squibb laboratories.

This was also the time when the first birth control pills were developed. Should Squibb with its experience in steroids also enter this field? There was some agonising over this. The President of Squibb at that time was a devout Catholic. Nevertheless, the decision was reached to enter the field. Since the area of oral contraceptives had already become crowded, development of a once a month injectable was decided upon in the hope of reaching a smaller but exclusive market. Fried synthesised Algestone acetophenonide (Droxone) as the progestational component which was not too dissimilar in chemical structure from Triamcinolone. It was combined with an estrogen. While under development, the first reports appeared in the literature linking high doses of estrogen to cancer. Unfortunately, the dose of estrogen in the drug was higher than was necessary, and there was concern that prolonged administration might be carciogenic. It would have been too costly to start over again with a lower ratio, so the project was abandoned. I thought I should also acquaint you with one of our disappointments.

Squibb was luckier with another long acting injectable, fluphenazine enanthate, followed by the even longer acting decanoate. They were developed by Dr. Harry Yale, and are very effective in giving schizophrenic patients relief from symptoms of their disease. One injection lasts from two to four weeks.

I should also mention that Squibb pioneered in the field of radiopharmaceuticals in which I had some personal involvement. It is interesting to note that while usually the conceptions for new drugs come from the pharmaceutical research laboratories, in the early years of radiopharmaceuticals ideas were brought to Squibb from practitioners of nuclear medicine and translated into products in our laboratories. The greatest accomplishment was, perhaps, the development of a sterile generator from which the very short-lived technetium 99m could be eluted. Technetium 99m has been found very useful in scanning for brain tumours.

In the late seventies and early eighties three significant new medicinals came to fruition. The first was the beta-adrenergic blocking agent nadolol (Corgard), invented by a Squibb chemist, Dr. F. Hauck. When one looks at the structure, the relationship to propranolol becomes immediately apparent. One might dismiss it as yet another me-too drug, but nadolol is a distinct improvement over propanolol. It does not exhibit the first pass effect in the liver which removes propanolol quickly from circulation, and, therefore, one administration of of nadolol a day is sufficient. In view of its chemical structure, we were surprised to find that the molecule is very stable in formulations and is not metabolised in the body. It is excreted partially in urine and partially in faeces and no metabolic products have been found, no matter how hard the scientists in the Drug Metabolism Department have searched for them.

The second drug is aztreonam (Azactam), an injectable antibiotic, active against gram-negative organisms. It belongs to a new class of beta-lactum antibiotics, called monobactams. The beta-lactum ring is not fused to a five or six membered ring as in penicillins and cephalosporins. It is curious that it took almost forty years after the discovery of penicillin to find this class of antibiotics. Monobactams were detected in an ingenious screen, looking specifically for beta-lactamase inhibitors. This screening test was the brainchild of Richard Sykes who had joined Squibb from Glaxo, England. In the meantime he has returned there in a much more elevated position. The first isolated monobactam was not very potent and had to be chemically modified. This was accomplished by Dr. Christopher Cimarusti together with Drs. Koster and Parker. The team also devised a total chemical synthesis for aztreonam which is used for its production. There is currently an intense world wide competition to discover other useful members of this new class of antibiotics.

The most exciting and most important drug by far to come out of the Squibb Laboratories since the days



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of the 9*a*-halosteroids has been the angeotensin converting enzyme (ACE) inhibitor captopril (Capoten), which has proved invaluable in the control of hypertension and congestive heart failure. Its evolvement goes back to the late sixties when Dr. John Vane, (BSHP's Foundation Lecturer in 1980), served as a consultant to the Squibb Institute. He brought to the attention of Squibb that the venom of the Brazilian arrowhead viper *Bothrops jararaca* inhibited the angiotensin converting enzyme. Dr. Miguel Ondetti, a brilliant peptide chemist, in collaboration with the enzymologist, Dr. David Cushman, succeeded in isolating and synthesizing from the venom the peptide peprotide, composed of nine amino acids. It would have been prohibitively expensive to produce this peptide on a large scale. So Ondetti and Cushman, aided by the pharmacologist, Dr. Bernhard Rubin, set out to explore the active site for ACE activity in the teprotide molecule, and after some trials and clever reasoning came up with captopril, a singular achievement. Needless to say, captopril has also been a great commercial success for Squibb. I am glad to report that the profits have not all been distributed to the stockholders, but have been ploughed back into a substantial expansion of the research effort.

This brings us to the present. During my discourse I have given you the names of Squibb scientists whose efforts were crowned with success. But there is many an outstanding scientist who labours in the vineyard of drug discovery without ever inventing an important drug. In this field you have to be good, but Fortuna also has to smile on you. Drug development is very much a team effort. The contributions of many disciplines are needed to come to a successful intoduction of a new drug, but no discipline more so than pharmacy. Development of an elegant and efficacious drug delivery system is the keystone in this game. There are many problems to be solved.

Pharmacists were the unsung heroes in the tale I have told you, but there is one success story where all the credit has to go to pharmacists, namely in the development of wound management and ostomy care products. In the late fifties a dentist encouraged Dr. Gilman Cyr in the Squibb pharmaceutical R&D laboratories to develop a formula to apply medication directly to the wet mucous membranes of the mouth. Dr. Cyr developed an ointment containing pectin, gelatin, and carboxymethylcellulose in plastibase for release in the mouth of drugs such as triamcinolone acetonide. Dr. James Chen adapted the basic formulation into an oral bandage to be used in dental surgery. He replaced plastibase with polyisobutylene and added a suitable backing. This bandage called Orahesive would stick to any surface wet or dry.

The bandage was no great commercial success, primarily, I believe, because of the quick healing of oral wounds. But half way around the world an Australian dentist brought the bandage to the attention of a surgeon who treated colon cancer patients. He found it superior to what was then available in the closing and management of stomas. Squibb headquarters was duly notified of this exciting new application, but did not react. Only when Australia threatened to develop it alone, was notice taken in the USA, and Squibb UK was assigned to explore its commercial potential. This led to the development of Stomahesive, followed by Sur-Fit two-piece ostomy appliance and DuoDerm an occlusive dressing. So successful was this development that ConvaTec, a new Squibb division, was created which by 1987 had sales over $200 million worldwide. A truly outstanding pharmaceutical success story.

My tale of 130 years of Squibb history ends here, having explored how the vision and initiative of Dr. Edward Robinson Squibb led to a large, multinational, pharmaceutical company with a healthy and productive research organisation. How would Dr. Squibb react if he could see today the company he had created 130 years ago? I am sure he would be pleased. I certainly consider myself fortunate that I could be a participant in the Squibb saga.

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# Antecedents of Dr. E.R. Squibb

**By J.G.L. Burnby**

At Monyash, an unpretentious though not unattractive grey limestone village, in the Peak District of Derbyshire, England, an event took place which was to be important in the development of pharmacy nearly 200 years later and 3,000 miles away. There, John Gratton, a recent and fervent convert to Quakerism, had made his home, a small farm, a centre for the Friends to meet and worship. On May 6, 1683 William Bunting of Matlock some five miles away, and Mary Stephenson of Peasonhurst were married. Four daughters, Silence, Patience, Sarah and Temperance were born to William and Sarah before their first son, Samuel, arrived on December 9, 1692.

Samuel Bunting was the great great grandfather of Edward Robinson Squibb (1819-1900). His mother died when he was barely ten years old and was buried in the Quaker burial ground of Buntingfield with her third daughter, Sarah, and youngest son, Job. His father followed his wife in January 1720, and Samuel announced to the Monyash Monthly Meeting later that year his intention to emigrate to America.[1] He arrived in Darby, Pennsylvania in 1722, aged 28. The Bunting family intermarried with the Bonsalls



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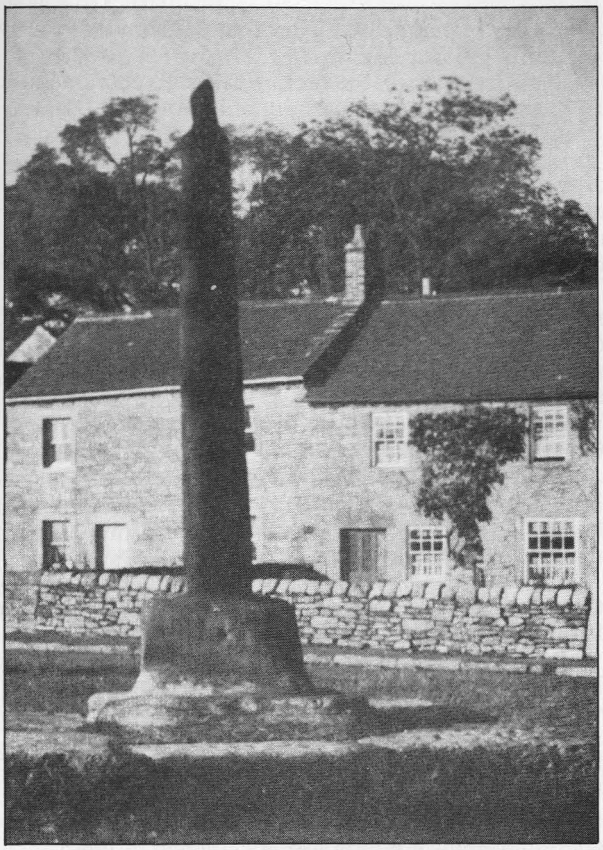

*MONYASH, once a lead mining centre and the village where William Bunting was married*

another early Quaker Derbyshire family. Catherine Harrison Bonsall in 1818 married James Robinson Squibb whose forebears, the Robinsons and the Hamiltons or Hambletons had originated also in Derbyshire although the home of the Squibbs was in the county of Dorset.[2]

Quakerism came late to the county town of Derby compared with the villages. Like its neighbouring county of Leicestershire, Quakerism was typically not urban but rural, and was to be found in the hamlets and villages of one to three hundred inhabitants. Nor was the Friend a prosperous burger but more usually husbandman and farmer, shepherd, wheelwright and miller.[3]

Information is sparse concerning the occupations of the Buntings and their friends. It is possible that William Bunting was a 'kersey-comber' for a man of that name and occupation was registered in May 1693 as a user of weights and measures in the parish of Matlock. William was almost certainly the son of Anthony Bunting who, with Anthony Woodward, both of Matlock, were arrested in 1665 and imprisoned for six months for their religious activities.[4] Woodward farmed at Matlock Bridge End Farm and had as well a badger's licence.[5] His daughter Alice, another important figure in the local Quaker movement, married Edward Booth of Peasonhurst a hamlet of four or five homesteads high up on the dark moors between Matlock and Ashover. In 1689 Booth registered Peasonhurst farm as a Meeting House for Quakers. Close neighbours were the Lees or Lows, substantial farmers at Buntingfield where a Friend's Burial Ground was established and where William and Sarah Bunting were laid to rest.[6]

Even today there is an air of isolation in these upland areas and it is not difficult to imagine the life of these tough hill farmers who travelled over the moors to sell their sheep and cattle, to attend Meeting, and above all to urge people to listen quietly to the Word of God. Such was the background at several generations removed of the man who made it possible for the first time in America to produce pure anaesthetic ether of consistent strength on a commercial scale.[7]

**Notes and references.**

1. Records of Monthly Meetings held at the Friends' Library, London.
2. L.G. Blochman, *Doctor Squibb, the life and times of a rugged idealist*, New York, Simon & Schuster, 1958, p.2,3.
3. R.H. Evans, "Quakers of Leicestershire, 1660-1714", *Trans. Leic. Archaeol. Soc.*, vol.28, 1952, p.79.
4. The Monyash Quaker burials show that in October 1700, Ellen, wife of Anthony Bunting of Matlock, was buried at Monyash, to be followed two months later by her husband, Anthony, who was claimed to be one hundred years old. The parish register shows that Anthony and Ellen Barker were married in Matlock on September 21, 1641. Exaggerated claims for longevity are not infrequently made.
5. Matlock bridge dates from mediaeval times and was an important crossing point of the fast flowing River Derwent. A badger was a man who carried provisions, most commonly corn, from house to house or to the local markets.
6. The exact site of the Burial Ground has not been located. Peasonhurst today consists of a restored farmhouse and cottage which has been extended into the barn.
7. Squibb perfected the process in 1852 using an improved closed still and continuous still distillation. Although medically qualified, Squibb always showed a keen interest in pharmacy having been apprenticed to Warder Morris a Philadelphia pharmacist and later working for J.H. Sprague for some years.



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# MAYOR FOR A DAY
# Edward Taylor of Rochdale

**By M.E. Wild**

In Rochdale in the middle decades of the 19th century there were three druggists who were actively engaged in the politics of the town and were all members of the Liberal party and Nonconformists serving on the Police Commission.

They were Thomas Booth, Edward Taylor and William Andrew Scott. The most prominent in local affairs was Edward Taylor. Edward was born in April 1813, the son of John Taylor a wholesale and retail grocer. Taylor senior died in 1818 and was buried in the porch of St. Chad's Church, along with his first wife and daughter. Edward Taylor's mother was his father's second wife, formerly Anne Whitworth, known by her family and friends as Nanny.

On her husband's death Nanny managed the grocer's shop in the Old Market Place whilst a Mr. Heape controlled the grocery warehouse next door. From the Old Market Place Edward saw the last bull-baiting event during which a wall collapsed into the river.

Edward Taylor's first schooling was at an infant's school run by the three daughters of a Nonconformist parson.

In 1824 Edward was sent to Albesford, a school near Warrington and a journey involving two coaches, changing at Manchester. At that school Edward was interested in scientific subjects and was detailed to administer first-aid, treating the cuts and bruises of the other boys. On November 5th he made fireworks for the school bonfire.

After leaving school he worked in a mill office at Gauxholme, a little hamlet near Todmorden some 8 miles away from Rochdale. Edward was then apprenticed to a Mr. Slater, a druggist of Halifax. The hours were long. Four days a week he worked 7 a.m. to 9 p.m., Fridays 6 a.m. to 10 p.m. and on Saturdays 7 a.m. to 11 p.m.

In 1831 Edward Taylor became a Methodist or, as Taylor himself said, he came to God from the preaching of a Peter McOwen. This event gave great pleasure to Mrs Slater, his employer's wife, who had heard Wesley preach.

In 1882 the Taylor family moved to a house in Drake Street, his mother giving up the shop. With sand banks at the rear a rural aspect was opened up, with Littleborough a village three miles away on the horizon. In 1834 Edward Taylor opened a shop at 5 Old Market Place. Attending the Baillie St. Methodist Church he became the Sunday School Superintendant. Along with other members of the congregation he was involved in the Church Rate controversy. The question of the paying of the Church rate became a matter for dispute nationwide as non-conformists objected to the upkeep of a church to whose mode of worship they did not subscribe *(Pharmaceutical Historian* Vol.19 No.1 p5)

Taylor also attempted to help depositors in a savings bank which failed in 1849. It became apparent on the death of George Haworth the actuary that two sets of books had been kept. The depositors claimed £100,403 but all the cash that was available was £28,666. Taylor appealed for help for the depositors to the Government and went to see Gladstone to press the case of the depositors. At that time Taylor was an Improvement Commissioner. By an Act of 1844 the Police Commission who had ruled the town were replaced by the Improvement Commissioners. Since 1825 the town had been controlled by the Police Commissioners who were reponsible for policing and lighting the town.

Below the surface of the tough politician there must have been a romantic heart. Edward Taylor's marriage was straight from the pages of a Victorian novelette or a Boon and Mills paper back. One night he dreamed he was walking along a country lane lined with spring blossom. Ahead he saw two women approaching. As the women passed him one of them gave him a charming smile. For days Edward thought of this attractive woman and her captivating smile. During the following summer he was invited by friends to a picnic on a farm on the slopes of Blackstone Edge in the Pennines. The party sat in groups on a bank by a lane side. Edward noticed the women coming down the lane from the farm. On reaching the groups the two women stopped and joined one of the groups. Edward immediately recalled his dream and that one of the women was the smiling woman of his dream. Introductions followed and Edward found that the wearer of the smile was Miss Brown from Garstang, near Preston, the daughter of a bookseller. So in November 1853 Fanny Brown, Edward's dream girl, became Mrs Edward Taylor. By the time of his marriage Taylor had moved his shop to 24 Yorkshire Street. The premises in the Old Market Place had been pulled down because they formed part of the river bank and were suffering from spillage.

Taylor had always advocated municipal ownership of essential services. In 1884 at his instigation the Commissioners purchased the Rochdale Gas Light and Coke Company. He became interested in the sanitation of the town as the result of the findings of a Royal Commission on Public Health set up in 1842. The insanitary state of Lancashire towns was brought to the



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notice of Parliament.

At that time Edward was of the opinion that water closets were the answer, with dry ash places for ashes from the domestic fire and other refuse. Later Taylor changed his opinion to thinking that if water closets replaced the midden system then the rivers would be polluted and offensive in a greater degree than from the middens.

Rochdale did not follow the Royal Commission's advice of introducing closets because of a legal objection. In a Bill before Parliament in 1853, in order to protect the river rights of two millowners the deposit of sewage was prohibited between certain points.

With the midden system the cost of removing the night soil was borne by a committee, the Scavenging Committee. This committee let out to tender the removal of the middens in 1858 at a cost of £657. Later the removal was undertaken directly by the committee, as the cost became prohibitive. Taylor was a persuasive speaker and so in 1869 the Scavenging Committee laid down a pilot scheme of Taylor's sanitation methods. This system involved emptying the privies on a fortnightly basis. Two boxes were provided, one for the lavatory and the other for the ashes from the domestic fire. The boxes were collected and contents formed into dry powder for sale as a manure.

Taylor had calculated that the amount of night soil to be collected including an equal quantity of cinders and domestic refuse, would be 70 tons a day from a population of 40,000. 1,600 privies which would be required would cost 7/6d (35p) each, together with nine carts and horses another £450. The whole scheme could have been launched for £5,000, under the supervision of the Scavenging Committee. However in 1869 the committee were only allowed to proceed with 100 closets. The trial was undertaken in the poorest part of the town, Church Lane and School Lane. The system was so popular that property owners in areas adjacent to the pilot scheme were willing to pay for the conversion out of their own pockets.

By 1873 the system consisted of a 10 gallon tub, covered with an airtight lid. The tub contained 2 pints of disinfectant. The other tub for the ashes could be of any size. All the tubs were lettered and numbered to correspond with a plan checked by the carter.

The committee built a special building near the centre of town 40yds by 10yds with steam engine, riddle and grinding machine, together with a hot air furnace. The total cost was £1,400 and served 40,000 in 9,000 houses. The manure was manufactured by throwing the contents of ash on to a floor of iron plates heated by hot air. When dry it was riddled and any combustible material burned to produce hot air and steam to supplement the steam engine. The night soil was emptied into two tanks. When half full sieved ash was added. To every ton of this mixture 24lbs of sulphuric acid was added. The result a dry powdery manure selling readily at £1 per ton. The manure contained 30% of ammonia and 6½% of phosphates, containing very little ash. The introduction of this system had from the outset produced considerable opposition. When the machinery for refining the ashes broke down the Council refused to allocate any money for renewal or repair. The mixing and transporting of the incoming materials had been done by simple automation so it was now necessary to do the operations manually. The process thus included the mixing of the acid and the two other ingredients. The workforce objected to the mixing by hand of the acid on an iron floor. Consequently the acid content was reduced by 75%. This affected the appearance of the final product and the users thought the manure was not as effective. Various other methods were tried and finally a new machine was installed. This was an American machine designed to dry blood and was adapted after a trial run with blood, excreta and fish offal. The excreta was packed around the inside of the cylinder. Ashes were still riddled and the combustible material heated in five furnaces. The steam raised was used for the passage of hot air through the cylinder. This resulted in a thick mud which was placed on the drying floor for the mixing with the ashes. Any noxious smell was removed by damp hot air discharged through a 25ft high chimney. The operation was carried out in a building 120 by 40yds including stables. A staff of 92 men including the carters in charge of 32 horses produced 600 tons of manure a week, selling at 66 pence (30p) a ton. Also a hundred tons of urine were sold to flannel manufacturers.

In 1856 Taylor was one of the first members of the newly formed Rochdale Council. He was of the opinion that Mayors should be paid a salary, so for some years he resisted attempts to nominate him for that office. However in 1891 he accepted nomination on the understanding that he would receive a salary. Just prior to the Mayor-making ceremony, Taylor learned that the salary was to be paid only during his year of office and not to his successors. Taylor later said that he felt embarrassed when the ceremony was proceeding and so attempted to prevent the chain of office being placed around his shoulders. However, he was duly elected Mayor, at which time Taylor adjourned the ceremony and went home. Maybe he consulted with his wife. In the evening the Council was recalled and he resigned. A unique place in the town's history for Edward Taylor, Mayor for a day. However on November 9, 1893 recognition of his services to the town was shown when he was made a Freeman of the Borough.

Three years earlier he had sold his pharmacy to J.J. Thomas & Son, then in business at 93 Yorkshire Street. J.J. Thomas had been apprenticed to Taylor and at one time, according to the *Rochdale Observer* obituary, he sold a shop in Garstang to J.J. Thomas.

By the time he retired, Edward Taylor was known to his customers as "t'owd mon" seen working in his dispensary as they walked up Bull Brow (a narrow passageway along the side of the shop). He died in November 1895, aged 82, the pharmacy which he opened in 1853 was closed earlier this year.



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## Diploma Courses

The Faculty of the History and Philosophy of Medicine and Pharmacy was founded in 1959 to help foster and extend more interest in medical history in the most general sense. The main work of the Faculty is the organisation of public lectures of a historic or philosophic nature on Medical and Pharmaceutical matters and the running of two part time courses. These courses lead to examinations for diplomas in the History of Medicine and Pharmacy and in the Philosophy of Medicine and Pharmacy granted by the Society of Apothecaries. Membership is open to all and a modest subscription charged. Six or seven lectures are held each year mostly at the Hall of the Society. Details are available on application from the Clerk, The Worshipful Society of Apothecaries of London, Blackfriars Lane, London EC4V 6EJ.

## Baunscheidtism

It is regretted that some words were omitted from the June *Pharmaceutical Historian* p.3. The last lines in column 2 should read:- " . . . and an additional spring to extract the needles from the skin. Friedrich Klee of Williamsburg, New York, U.S. patent No. 55775, 1866 invented an instrument which though a good deal shorter than the original, worked in the same manner but the depth of penetration of the needles was controlled by a screw on the handle. In addition, the needle passed through a . . . ."

## An Invitation

BSHP members are invited to attend The Benelux Society's next conference which is to be held on October 14-15, 1989 at Amersfoort, near Utrecht. A guided tour is planned through the old town and "communications" will be heard on Saturday afternoon and Sunday. Details are available from –

Dr. A.I. Bierman – Apotheker,
Duyvesteynstraat 5
3042 BA Rotterdam
Tel 010-15 44 22 (She speaks excellent English)

## Pharmacy Stamp Album

The American Institute of the History of Pharmacy has published a topical postage stamp album on pharmacy by George Griffenhagen.

Each three-hole drilled, loose-leaf album page, printed on heavy, acid-free, white stock with rounded corners illustrates in black and white the stamps and postal stationery that portray the history of the profession of pharmacy. A total of 435 postage stamps and five items of postal stationery representing 112 different countries have been reproduced covering the ancient Sumerian, Egyptian, Greco-Roman, Islamic, and Medieval pharmacy to the birth of modern pharmacy." Also included are pages for the tools of the apothecary, military pharmacy, pharmaceutical education, international pharmaceutical organisations, and the development of the pharmaceutical industry worldwide.

The album does not include illustrations of postmarks or covers, but eight matching album pages are provided for mounting these desirable philatelic items, as well as for mounting new postage stamp issues. Griffenhagen explains the absence of stamps portraying the materia medica associated with pharmacy by saying that "a full discourse on this must be left for a future endeavour."

The 72-page album plus eight matching blank pages, in a shrink-wrapped package, is available from the American Institute of the History of Pharmacy, 425 N. Charter Street, Pharmacy Building, Madison, W1 53706-1508, at a cost of $18.

## Books Received

**A Catalogue of Seventeenth Century Printed Books in the National Library of Medicine**

Compiler Peter Krivatsy. Government Printing Office, Washington D.C. 20402, U.S.A.
Order No: 017-052-00255-4 pp 1315 $56.25

A hardback publication listing about 13,300 books printed between 1601 and 1700. It is an immense work (over 3 ins. thick) and includes monographs, broadsides and pamphlets usually under the author's or editor's name. However the compiler has not merely recorded titles, he has also added where appropriate such comments as:-

"A reprint of - edition" or Imperfect,
lower margins trimmed", etc.

In respect of a Pharmacopoeia Londinensis there is the comment – "According to the printer's note to the reader (last page) the book was printed in 1638, Imprint date on engraved title page appears to have changed to 1639".

Whilst this tome is not one for general reading, but to be consulted from time to time, the excellent typography and binding ensures pleasurable handling and reflects the scholarship in its collation.

It is the fifth in a series of book catalogues of pre 19th century works in the National Library of Medicine totalling nearly 45,000 items.





Set by Typesmiths. Printed by Swiftprint (New Malden) Ltd. Tel:01-648 9469.

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## Diary Dates

**1990**

**February 14**
Nigel Tallis, Assistant Museum Officer, RPSGB, London.
"The Historic Photographic Collection of the Royal Pharmaceutical Society of Great Britain".

**March 13**
The Foundation Lecture. Dr Roy Porter.
"Manufacturing Drugs in the Early Consumer Society: The Case of Corbyns".

**April 27-29**
The Spring Conference.
To be held at Gloucester (Details to be announced)

**May 2**
"Working Towards a Reformation: The London Pharmacopoeia, 1738-1746".

## Annual Election of Committee

Members are reminded that nominations for the annual election should be submitted in writing to the secretary at 36 York Place, Edinburgh on or before February 1, 1990. Members due to retire in 1990 are: Dr J.G.L. Burnby, Dr W.E. Court, Dr M.P. Earles and Mr T.D. Turner.

## Books Received

**Justus von Liebig und der Pharmazeut Friedrich Julius Otto in ihren Briefen von 1838-1840 und 1856-1867.**
Emil Heuser. Bionomica-Verlag Mannheim. 1989. pp44.
ISBN 3-88208-014-0.

Continuing his study of the life of the eminent chemist Justus von Liebig (1803-1873) and the history of pharmacy in Braunschweig, Emil Heuser has collated a series of 12 letters between Liebig and the pharmacist Friedrich Julius Otto (1809-1870) together with letters between Liebig and the publisher Hans Vieweg of Braunschweig, Otto and Friedrich L. Knapp, Liebig's brother-in-law and sometime Professor of Technology in Geissen, and Otto's son Friedrich and Liebig.

F.J. Otto, the son of a draper and grocer, trained as an apothecary and specialised in chemistry in Jena under famous teachers such as Dobereiner, Zenker and Wackenroder. He gained experience in chemical manufacture and agricultural chemistry and was involved in pharmaceutical education and organisation. He was the author of standard textbooks on general, agricultural and forensic chemistry. He had worked for a time with Liebig in Geissen, developing a lasting friendship. Otto is remembered for the still-used Stas-Otto system of alkaloid separation.

The letters reveal the range of activities pursued by Liebig and Otto. Thus references made include organic acids, alkaloid analysis, Otto's collaboration with Thomas Graham of Glasgow on a German edition of 'Elements of Chemistry', the Marsh test for arsenic, the crystallisation of morphine, proteins in leguminous seeds, etc. At a more personal level, reference is made to academic problems and status, salaries and family matters, revealing the generosity and kindliness of Liebig.

Carefully reproduced in modern German script with scholarly annotations and cross-referencing, these letters present further facets of the lives and times of some famous scholars.

W.E. Court

1848



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# Three Cheers for Blue and White: the Best for the Chamber

**By Robert Copeland**

This talk looks at many of the objects which, although not absolutely and directly concerned with pharmacy, nevertheless are concerned with the well-being of people as they go through life.

We will look back in time to the early eighteen hundreds when coach travel was the means of getting from place to place. In those days there was no corridor on the coach by which you could reach a convenient facility; however, you might be fortunate to find a chamber pot within the confines of the cab. There were two sorts of this convenience. One was a standard 'sit-upon' chamber pot protected by being in a wooden box. A Spode one (in the Dyson Perrins Museum) is printed in blue but richly coloured in crimson: the pattern on it is the one known as 'Tumble-down Dick'! The more common objects of relief are those known as 'coach pots', or bourdaloues. These were oblong vessels with flat bottoms to improve stability. I have only my imagination to guide me in their actual use as the coach, with other travellers inside, raced along the roads, rocking and pitching over the uneven surfaces.

On arrival at your destination – your own home or one of your friend's – you enter the front hall. There, on a great wooden chest, might be a large barrel scent jar containing a stock of pot-pourri, some of which would have been sprinkled on the flat inner lid beneath the perforated cover. This was a standard way of keeping the atmosphere smelling as sweet as possible. For many generations it was common practice to expectorate in public as well as in private. So you would find a cuspidor, or spittoon, close at hand. In some fashionable clubs, a large one might be placed on the floor: the story is told of two elderly members who entered the hall of their club after it had been refurbished and, in the process, the spittoon had been removed. "I miss that spittoon", said George. "Aye!", said his friend, "you always did"!

"Dinner is served". Although it is rare to find such consideration, some sideboards were fitted with a small cupboard at the side in which a chamber pot, or vomit pot, was kept – for emergencies. In large houses and castles, there might even be a small closet opening off the dining room in which chamber pots would be kept in a cupboard. It is the custom, or is in some houses, for the ladies to leave the gentlemen after dinner; what do you suppose gave rise to this practice? Nothing less than discreet consideration for the comfort of all present! The ladies withdrew to the 'with-drawing room' where a parlour-maid would lay out in a circle the correct number of chamber pots for the convenience of the ladies. There was nothing bashful in this; it was a natural necessity and part of the social scene. Could it have given rise to the 'ladies circle'? The similar procedure took place in the dining room. Sometimes the toilet ware was of the utmost magnificence, even matching in design to the 'garniture' of scent-jar (pot-pourri) and match spill vases on the mantle piece. The ewer and basin was provided for the guests to wash their hands afterwards. It is well to remember that there were no flush lavatories or wash-basins with hot and cold running water in those days. Today, we take these things for granted.

When the gentlemen rejoin the company of the ladies in the drawing room, they will find several incense burners of different sorts. These might be of the pyramid shape, or a bowl on three dolphin shaped 'legs' or in the form of a charming little cottage, through the chimney of which the thin smoke of the incense curled attractively. Such devices were essential in polite society in the days when people seldom, if ever, had a bath, and in over-heated rooms would stink! Indeed, someone might be overcome by the 'atmosphere', or by some inappropriate remark, and need the administration of smelling salts. For this purpose, the potter provided a range of scent bottles; some would be permanently on the furniture, looking gorgeous in their fine, colourful decoration, while others were made for carrying in your handbag or pocket, with a secure metal lid.

While we have been in the 'state' or 'reception' rooms, the ceramic objects have mostly been of bone china and colourfully decorated. Now, as we go upstairs to our bedrooms, we find that most of the objects of interest are plainer, and usually of under-glaze blue and white transfer-printed earthenware. In a grand house, the toilet set might have the monogram or crest of the owner, or be decorated in colours – but usually underglaze. Before the advent of tin-enamelled ware, toughened glass, aluminium or 'plastics', glazed ceramic ware was the most hygienic material for the manufacture of articles for sanitary and medical use. And under-glaze decoration survived much longer than over-glaze colours.

Apart from the obvious toilet wares, which were usually sold in sets of fairly standard composition, there were other objects for the well-appointed bedroom. Bidets, set in nicely made mahogany stands with deep covers, would be more common than they are today, or until recently, in this country. Eye-bath or inhaler might be in the cupboard. For the weary, or sufferer from rheumatics, a leg-bath would promise relief; when you returned from a morning's shooting or a hard day's ride, an half-hour spent with your legs in a mustard or Epsom salts bath might work wonders. And for baby, feeding bottles, with a piece of muslin tied around the nipple, were common in nurseries.

So far the items mentioned were for the use of those who were physically well or were only mild sufferers. But for those who enjoyed bad health, the potter could supply a wide range of wares for both sanitary and medical purposes. In the well-equipped sick room you could have a ladies slipper (bedpan), inhaler, pap-warmer and a variety of invalid feeding-cups. Several models of bed baths were available, complete with instructions for their use printed on each one.

In the pharmacy itself, of course, pottery vessels had been used since medieval times. The familiar syrup and drug jars in tin-glazed earthenware, decorated in maiolica colours of blue, green and orange, or just in



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blue, feature in collections of medical ceramics, as do pill slabs, barbers bowls and other objects. In the 1800s, tin-glazed wares were replaced by lead-glazed pots – usually of less attractive decoration. But essential items included drug and syrup jars, pill boxes, and leech jars. For the person concerned with her or his appearance, there were many proprietary brands of cosmetics such as bear grease, for which the potters made special pots.



Abstract from a paper given at the British Pharmaceutical Conference, Keele University, September 15.

# Bates and Hunt at Blists Hill The Story of an Historical Project

**By Martin Shakespeare**

This paper is about my involvement in an unusual historical pharmacy project at the Blists Hill site of the Ironbridge Gorge Museum Trust, Telford, Shropshire.

The Ironbridge Gorge Museum Trust was established in 1967 to conserve for future generations an area which led the world in the manufacture and use of iron from the beginning of the 18th Century. By the late 1970's a site at Blists Hill just outside Madeley, Shropshire had been made available to the Trust, and various buildings and machines of historical interest had been transferred and re-erected there. It was decided that the site should have a township, based upon the 1870 to 1880 period, with a variety of industrial, domestic and commercial premises.

In late 1982 a decision was made that the site should have an historical pharmacy incorporated into the development proposals.

The British Museum (Science and Technology) was approached and promised help, with an offer of fittings and artefacts, grant aid was sought and obtained from various sources, including English Heritage and the English Tourist Board.

The fittings which the British Museum made available were so large that it was decided that the building would have to be designed around them. To this end Messrs Hunt and Wood, architects, were able to draw up the designs for the building, and after their acceptance by the Ironbridge Gorge Museum Trust, work was begun on the corner site at Blists Hill.

The building is, and was never intended to be other than, a constructed shell, embodying the spirit of the period 1870-1880 rather than a slavish and expensive copy of a particular building. But early in the project it became very clear that the internal outfit of this exhibit was to be the source of its interest and charm.

I became involved in the project just prior to the commencement of the construction. As a Friend of the Ironbridge Gorge, I had declared my profession on my enrolment form and was approached early in 1983 to see if I was interested in furnishing advice on various aspects of the project. Nothing loath, I agreed to do all in my power to assist and was soon heavily involved. During the project there were few areas of my pharmaceutical knowledge which were not tested or expanded, especially my skills in Latin and pharmacognosy, two pre-requisites for any aspiring historical pharmacist.

At quite an early juncture of the project, the problem arose over the naming of the exhibit. Due to the legal restrictions imposed on the use of titles, the exhibit could not be called a "chemists" or a "pharmacy", although by that time, (and still!), it was being called "The Blists Hill Chemists Shop".

Finally a compromise was reached. The exhibit was to be called "Bates and Hunt". This was an acceptably legal title, and was also important in local terms, having been the trading name of a once highly successful chain of pharmacists in Shropshire, which had recently ceased trading. From one of their previously owned premises in New Street, Wellington, Shropshire came various donated items including the wonderful embossed Art Nouveau plaque now displayed at the exhibit.

The fittings for the exhibit, as had been previously stated were obtained from the British Museum (Science and Technology), and arrived on site in early 1983.

These fittings had had a somewhat chequered history, having previously formed part of the Wellcome Institute's collection. The Wellcome Institute had had them donated to them by Pars Pharmacy at Bournemouth.

Pars Pharmacy had the distinction of being one of the few round pharmacies in the United Kingdom, and had been established at the West Cliff of Bournemouth in 1876, by one Mr Pars.

After some investigation it was found that the fittings history did not commence then, but earlier as Mr Pars, (famous for his PARsimony) had obtained them secondhand from a London pharmacy first fitted out in about 1810. Yet another strange fact became extant at this juncture. The fittings being nearly fourteen feet in height, Mr Pars had his pharmacy designed around the fittings, echoing the construction of the Blists Hill premises.

On arrival at Blists Hill the fittings were inspected and re-assembled. Their general state of repair was moderate at best and they had to undergo a major program of resoration by skilled cabinetmakers in the site's workshops. One of my tasks consisted of launching an appeal through the columns of the *Pharmaceutical Journal* for glass knobs to restore the drug run drawers to their former magnificence. The response was overwhelming and allowed not only the drug run but all the cabinets and other drawers in the fittings to be refitted.

The drug run presented its own particular problems. For transit the drawers had been removed and on arrival it became impossible to relocate them correctly.



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On a cold weekend in late March I spent two whole days in the just glazed and plastered shell of the exhibit, working by gaslight trying to unravel a two stage jigsaw puzzle. The first stage was to replace the drawers in their correct order. The problem seemed to be unsolvable, the drawer run consisting of over sixty drawers, the majority of which being nearly uniform in size, but not quite so. Luckily the original maker had foreseen just such an eventuality and had marked every drawer and the frame, with numerals in carpenters pencil, still fresh and recognisable more than 150 years later.

Originally the drawers had been labelled with rectangular glass plates, decorated on the obverse with red and black legends of asphaltum and sandarac. The legend was covered on the obverse side with gold leaf, and this gold leaf was attached with a balsamic preparation onto the drawer front. With the passage of time, the gold leaf had fractured, leaving a portion of the leaf and its legend, on the glass plate, and a portion on the drawer front, the two now being separate.

As many of the old plates as were available were matched to the remains on the drawers, being reunited with superglue.

This left about ten drawers which needed complete replacements. These were made by the museum's Art Department using glass, enamel paint, and gold plasticised film. These were attached to the drawer fronts over any remains, also with superglue.

The main fittings having been restored and placed in the shop were topped off by the readdition of book boxes. These boxes which are shown on an internal view of Pars, do not appear to be of the same age as the rest of the tall fittings, but are a later addition for the storage of prescription books.

Along with the generous donation of the fittings by the British Museum (Science and Technology), the Ironbridge Gorge Museum Trust was also lucky enough to receive many other items which had come from Pars' Pharmacy. These included three carboys, many prescription books, powder jars, shop rounds and ointment containers.

Shortly before the shop was to open to the public it was found that the number of artefacts available did not fill the shelves adequately. In fact the result was one of desolation.

Luckily a series of phone calls, and visits by Michael Day and myself to several local, long established pharmacies yielded a wealth of help and donations which led to the shelves being fully filled on opening day. Most of the items are on temporary loan, and I must thank the following for their assistance: Mr Kenneth Lunt of Shrewsbury, Mr Kenneth Crowther of Shrewsbury, Mr William Haines of Wem, Mr Peach of Shrewsbury, and Rowlands of Wrexham. I must also thank the then proprietors/owners of the Kidderminster and Bridgnorth Medical Halls.

All of these donations made it possible to open the pharmacy with a reasonable collection of artefacts and to give it that "finished" look. Prior to the opening to the public, all the liquid bottles were filled with coloured liquid, being made of food dye, and water, heavily laced with sodium chloride to prevent any further deterioration of any of the soda glass bottles. The same was done for the carboys, and so far there has been no deterioration of the glass.

Shortly after opening, the magnificent set of pink ointment jars now displayed on the top of the drug run were purchased from an Ellesmere pharmacy. These jars, complete with their liners and 90% intact, make a superb addition to the display.

The Museum has also received since the opening many other donations and have included many of these in the inventory of objects now on show.

As with all the exhibits at Blists Hill the chemist's shop is lit by Calor gas which also provides fuel for the Victorian cast iron radiator (from the Castle Pharmacy at Shrewsbury), and the bench burner, a brass fixed bunsen burner from Wem. On Blists Hill Gaslight Evenings, held annually in the autumn this makes the pharmacy very "atmospheric", and much more restful than the harsh fluorescent light we use now.

Michael Day, the then Keeper of Social History, and manager of the Blists Hill site, had always been keen on the exhibit being a "working" premises, in common with all the other exhibits at Blists Hill.

It had additionally been suggested that it might be possible to set up a small scale manufacturing operation. Obviously this could only encompass cosmetic items, and after consultation with the trading standards authority, label designs were produced for some products.

Containers could have been a difficulty, but for the generosity of Sterling-Winthrop who supplied uncapped Franolyn bottles. These bottles when fitted with a tapered cork, (obtained from Gallenkamps), were sufficiently Victorian to fool many experts. Soon production and packing of Rose water, Orange Flower water, Bay Rhum, and Almond Oil was underway.

Finally the day came when the pharmacy opened to the public, most of the hard work was over. For various reasons, including the wishes of the sponsoring organisations, the official opening was delayed, although the first members of the public were admitted early in 1984.

The premises of Bates and Hunt were officially opened by the then President of the Pharmaceutical Society of Great Britain, Dr Hopkin-Maddock on the afternoon of July 9 1984. This for me was the culmination of the project, after that date I had little more involvement, but I retain very fond memories of my involvement.

**Acknowledgements**

In conclusion I would like to acknowledge the help that I have received from various sources in the preparation of this talk. I would like to thank Angela Enever of Sterling Winthrop for the loan of some slides, Maurice Hunt, Architect for the copies of the plans, Lawrence Knot and John Powell of the Ironbridge Gorge Museum Trust for their assistance with documents and material, Michael Day, now of the Jersey Heritage Trust for all his assistance, and Josephine Sheppard, for the slides, and her assistance.

**Footnote**

Abstract from a paper given at the History of Pharmacy Session, British Pharmaceutical Conference, Keele University, September 13.



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# Sir John Pringle and the Apothecaries

**By Charles Gordon**

Though John Pringle crops up in most books about 18th Century medicine, his is far from an household name. This is not surprising as there has been no biography since Dr. Kippis, a clergyman friend, published a brief eulogy as the foreword to his edition of Pringle's six scientific "Discourses" over two hundred years ago. He is however chiefly remembered as the author of the first authoritative work in English on army medicine. The first part of this talk comprises a biographical sketch with particular regard to his relationship with apothecaries, whom most physicians tended to patronise. Pringle was not too proud to learn from them.

He lived from 1707, the year of the legislative union between England and Scotland - to 1782, when the American Colonies were just about to gain their Independence. He was the fourth son of a Lowland Scottish Baronet, a modest country gentleman who taught his son the 'cello. On his father's death, he was sent, aged 15 but already fluent in Latin, to St Andrews University where a cousin of his father, the Professor of Greek, supervised his studies and introduced him to the Works of Francis Bacon. He next spent a year at Edinburgh University but, for family reasons, was then sent to learn trade with other cousins established as merchants in Holland.

There, during a visit to Edinburgh friends studying law at Leyden University, he happened to hear a lecture by the famous Dutch Professor, Hermann Boerhaave, whose exposition of the application of scientific method to the practice of medicine so captured his imagination that he decided then and there to abandon the prospects of profits from trade and to spend his small patrimony on studying to become a physician. He graduated as MD in 1730 after three years at Leyden. Boerhaave's teaching on scientific method settled the pattern of his life. It was an age when it was still possible for an educated man, not only to maintain an informed interest in scientific developments generally, but also to become proficient in several. In Pringle's case, in addition to medicine, this was true for chemistry, electricity and botany, but above all for pharmacy as, I hope, the latter part of this talk will show.

Since I was asked to give a talk, over a year ago , further research has revealed that Pringle's concern with pharmacy went far deeper and lasted much longer than his Army service, which comprised, after all, only eight of the fifty years of his active life between graduation and death. Apart from his responsibility for the first army Dispensatory in 1746, the full extent of his share in the revisions to the 1756 and 1774 editions of the Edinburgh Pharmoacopoeia is now apparent and will be the subject of the second part of my talk.

On returning to Edinburgh after a brief visit to the hospitals in Paris, he started to practise as a physician with little success at first. It does not seem that his uncle, another Francis Pringle, who had just completed his spell as president of the Royal College of Physicians of Edinburgh, did much, if anything, to make things easy for him. Perhaps, as James Boswell suggests[1] he, like his nephew's friends, "stood aloof, thinking he might be a burthen to them". It fell to Boswell's father (later Lord Auchinleck) and to one George Young, a humble Surgeon-Apothecary, to befriend him until 1734 when his chance came to attend professionally the Earl of Stair, one of the leading figures in Scotland. It was said by "waggish contemporaries"[1] that he made an ostentatious display of the Earl's splendid coach and six horses sent to fetch him. Be that as it may, soon after it so far overcame the indifference of his snobbish fellow-citizens, that his practice immediately improved. He was admitted first a Licentiate of the Royal College and, shortly afterwards a Fellow. In the same year, to supplement his meagre income, his friends on the Town Council were able to have him appointed Professor of Ethics at the University.

It was typical of him that, as soon as he was established, he sought to help George Young in a practical way. An helpful contact at that time was Dr. Thomas Simson, who had joined as the First Professor of Medicine at St. Andrews the year Pringle entered that University.
correspondent for the rest of his life. it was no coincidence, I believe, that in 1736 Simson proposed to the University Senate at St. Andrews that they should confer an MD on George Young, a Surgeon-Apothecary in Edinburgh in recognition of his generosity in releasing for public use the prescription for the Glass of Antimony as well as for his years in medical practice and good character. The Glass of Antimony - Vitrum Antimonii Ceratum - a specific for dysentery, was apparently concocted originally by a Minister in the Scots Church, then developed as a secret nostrum until finally made freely available to the public by George Young, whose diploma in Latin, drawn up by Professor Francis Pringle and Dr Simson, is still on record in the Professor's Commonplace Book in the University Library.

It will be noted that Young was a Surgeon-Apothecary and it seems appropriate here to emphasize the importance of the incorporation in Scotland since 1695 of the Apothecaries with the Surgeons, which may not be fully appreciated in the South. The incorporation is referred to in a letter dated 1743 from Dr John Clerk, then President of the Royal College in Edinburgh,[2] in which he expressed his concern that the incorporation had led to a deterioration in the work done on pharmacy, though, he adds wryly, "their lack of skill relieves them of involvement in the frauds which are perpetuated in London".

On the other hand it had also I believe, played a part in the success of Scottish medical men outside Scotland generally and specially as Surgeons in the Army. Those who were educated and trained in the two disciplines were better qualified for a job where knowledge of both were essential. A knowledge of general medicine was also necessary and it is clear from Pringle's references that George Young was a



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general practitioner well before he became a Licentiate.[3] In London the division between the three disciplines was, at this time, still monitored by influential survivals of the Medieval Guilds.

As an MD at St Andrews, Young was then entitled then to claim to be admitted under the Statutes of the Royal College of Physicians in Edinburgh as a Licentiate there. The College was to try for the next twenty-six years to stem the influx of such Licentiates and even Fellows, who took this route into their hallowed ranks. Pringle had little regard himself for men's origins or formal qualifications: it was their qualities with which he was concerned. This remained a guiding principle throughout his life, as both his actions and his writings prove. His behaviour towards the apothecaries with whom he was increasingly associated illustrates this most clearly.

But reverting to the biographical sketch- in 1742, when Lord Stair was appointed Commander in Chief of the Army which was sent to Flanders on the outbreak of war to ensure that the French did not over-run the dominions there of our Austrian ally, Pringle accompanied him as his personal physician, being allowed to nominate deputies to give his University lectures. In Flanders, Pringle's immediate attention to the need for more hospital care for the sick in the army, earned him the respect of the high command and resulted in his appointment, additionally, as Joint Physician-General to the Forces overseas. His dual Army appointments were renewed by the Duke of Cumberland, younger son of George II, when he assumed command in Flanders in 1745.

When the peace came in 1748 and with it the disbandment of the army hospital, he continued as Physician in Ordinary to the Duke in civilian life in London, setting up also in private practice. Medically Pringle is often dismissed as "only an Army Physician". The standard work on naval medicine even dismisses him as a Surgeon. He has thus incurred the neglect given to a branch of the profession from which not much was to be expected. The fact that his only major published work, his classic "Observations on the Diseases of the Army", by its very title, was thought to be of limited scope, has seemed to many to justify this attitude. Benjamin Franklin, on the other hand, in his "Poor Richard's Almanac" recommended it for general purposes in Philadelphia soon after it first appeared and Dr Serao, the Italian translator, urged its applicability to civilian medicine.

No doubt helped by the Duke's patronage he was able to establish himself quickly in London and thereafter he competed most successfully in practice with the sharpest minds in the profession throughout Britain and was highly regarded by those on the Continent. In an open printed letter to Dr Mead he identified as one disease (later to be called typhus), the "lingering fever", a form of the malignant hospital fever from which the army had suffered so badly after Dettingen and Culloden, with the jail fever which in 1750 killed off many of the Newgate prisoners and half the bench of Judges before whom they appeared. He also carried out a series of scientific experiments into the nature of sepsis, of which reports were included in the Transactions of the Royal Society and in his magnum opus, (which I have just mentioned) - "Observations on the Diseases of the Army", published in 1752. It was to go through seven editions in his lifetime and was translated into French and German besides Italian.

He was recalled, rather unwillingly, to Army service in 1756, and attended the seriously sick in the camp hospitals for the troops under training for the new war (the Seven Years War). In 1757 he accompanied a substantial naval and military force on a combined operation intended to land on the coast of France near La Rochelle in the Bay of Biscay. In the event only one small island was captured but he gained valuable first hand experience of conditions in naval transports and in the Fleet itself, which bore him in good stead when he drafted his standard instructions for accommodation, hygiene and diet in the transports.[4] These were echoed in the regime which the naval Captains Wallis and Cook used so successfully ten years later to combat the dreaded scurvy during their circumnavigations of the world.

After this campaign Pringle was put on half-pay but in the following year he was called back again briefly to attend the hospital set up on the Isle of Wight for the sick of two similar expeditions, whose commanders had not followed his recommendations and whose men were suffering from the diseases due to the overcrowding and bad sanitation in transport vessels common in those days.

Ill health and disenchantment with the War Office led him finally to resign from the Army the following year but he continued to publish new editions of his "Observations" until the 7th in 1774. He updated each new edition with revisions based on reports from his former colleagues on their experiences in the Seven Years War. He also corresponded with their counterparts both among the allies and the enemy, in whose countries his book was seen as having a far wider application than for army use only. The last French edition was issued in 1854. Their troops, but not ours, had the benefit of his advice in the Crimea.

In 1761 on the arrival of Princess Charlotte of Mecklenburg-Strelitz as the bride of the young King George III, he began his twenty years of personal service to the Royal Family which lasted until his death when he was appointed Physician to the new Queen's Household. In this capacity, under the Rules for the Household drawn up for George I's Court, he would have been responsible for all the members of her large staff and also, as a measure of economy for ensuring that the drugs dispensed by the Apothecary to the Queen's Household were limited to those he prescribed. This post was held by John Devaynes, "Laughing Jack" as James Boswell called him, with whom he established an excellent rapport, attending him and his family, as he did with Augustus Heinrich Brande, the Apothecary to the Queen's Person, both appointed with him in 1761. Brande's son, Augustus Everard translated the sixth edition of his "Observations" into German in 1772.

Drs Letherland and Akenside were the first Physicians-in-Ordinary to the Queen's Person, but



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Letherland, who had been physician to Queen Caroline the King's grandmother, died soon after and Pringle succeeded him. In addition to caring for the Queen, he also looked after the King's mother, the Dowager Princess of Wales and an increasing number of royal children. At this time it appears that a major part of his private practice was as a consultant, and particularly giving second opinions to patients, other physicians and many apothecaries, often by post from all over the country. In his "Medical Annotations", which span his whole life, he gives brief references to only 4 army apothecaries but includes cases from 21 in civilian practice in London and 14 in the rest of the country, as well as from the Royal Apothecaries and Michael Clark, Operator at Apothecary's Hall, (to whom I shall refer again later). These cases he recorded as particularly interesting. They must represent a far greater number of apothecaries with whom he had dealings which are not recorded. In many cases the reference consist of half or three quarters of a page of the apothecary's report, which is followed by Pringle's written opinion. On a few occasions he sent out a questionnaire to elicit more information. Where he accompanied the apothecary to see a particularly interesting case,he may give a day by day account of subsequent events and even in fatal cases the autopsy report, often from John Hunter or Hewson.

By 1769 his private practice in London and his consultations had brought him a sizeable fortune but he had long suffered from insomnia and also agues - possibly recurrences of the malaria - first incurred in the swamps of Flanders. A bad attack of hepatitis then caused him seriously to contemplate retirement to Scotland and there to venture again upon matrimony. He had long promised his family that he would return one day to his native land. Initially he tried spending two summers there and started to build a house for himself in the New Town at Edinburgh. It was at this time he became involved again in revising the Edinburgh Pharmacopoeia, a matter to which I shall return.

At this point of his life however events took a different turn. Impressed no doubt by his appointment as Physician Extraordinary to the King in 1772, the Fellows of the Royal Society elected him their President. Plans to return permanently to Edinburgh were abandoned (and incidentally any further thought of remarriage) and he resolved to give up most of his practice, attending only the Royal Family and keeping his 'Chamber work', by which I suppose he meant consultations at home with other physicians and apothecaries[5].

He then settled down, with his morale and health restored by the honours heaped unexpectedly upon him, and devoted much of his time for the next six years to the promotion of the developments in natural science which the Royal Society was actively sponsoring, involving himself personally in many of the experiments, particularly those of Franklin and Walsh (electricity), the Hunters and Hewson (physiology and anatomy), Priestley (chemistry), Maskelyne (magnetism and gravity),Wallis and Cook (nautical hygiene and diet). Ex-officio appointments included those of Commissioner of the Board of Longtitude and Trustee of the British Museum, in both of which he took much interest.

One of the matters being debated then in the Society was a practical problem of electricity - whether lightning conductors should have a ball or a point at the aerial terminal. It became so contraversial that it split the membership. Though a large majority including Pringle, supported Benjamin Franklin on pointed ends, others, who had the King's ear, demanded an official retraction. Pringle refused as President to compromise on what he believed to be a matter of principle. The resulting furore caused him to decide not to stand in 1778 for the Presidency of the Royal Society for a seventh term.

His remaining three years were clouded by disappointment and ill health. He spent part of the time at Edinburgh and Bath but neither his spirits nor his health were revived. He continued a member of the Royal Medical staff until the end but does not seem to have been active in that role. For the past twenty years or more, he had enjoyed a close relationship with the Royal couple and their children, 14 at the time of his death. All had survived to adulthood except for the two born in his last two years. How far the lightning conductor dispute affected his relationship with the King is still moot. The King retained his own health and sanity for another six years.

Although his published works are limited, his encyclopaedic but little studied "Medical Annotations" are set out in ten manuscript volumes in 259 "Articles" or subjects, which he left in his will to the Royal College of Physicians in Edinburgh. They contain much of interest for the History of Medicine in the many letters and reports from his correspondents throughout the Western World. In the absence of more published work it is difficult to find any yardstick by which one may measure the contribution such a man made to his Age - the Age of Enlightenment. There is, however, one area where something can be done to examine in detail what share he had in the course of events and that lies in pharmacy and here I turn to the second part of this talk, which requires us to retrace our steps somewhat.

Quite how early he became involved in the various editions of the Edinburgh Pharmacopoeia is at present uncertain. The third edition appeared in 1735, the year after his admission first as Licentiate and then as Fellow of the Royal College of Physicians there. There was a Dr Pringle on the Committee entrusted with the revision, but at that time this title, in the Minutes of the College,invariably referred to his uncle, the Francis Pringle who had been President some years earlier. One may, however, suppose that he helped with the revision and began his regular practice of noting down on each new edition where he thought there might be further improvements.

In the early 1740s the revisions for the fourth edition were entrusted to Dr John Clerk, a rising influence in the College, and soon to be its President. It was to Clerk that Pringle submitted the early drafts of his "Observations on the Diseases of the Army". One



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of the first entries in his "Medical Annotations" is a long letter from Dr Clerk written in 1743 in which he discussed the draft Observations with regard to dysentery, based on Pringle's own dissections which he must have carried out while in winter-quarters in Aix-la-Chapelle and Clerk continues with references to his apprehensions about the deterioration of pharmacy in Scotland, due to the Incorporation to which I have referred. He ends by commenting on what he calls significantly "your Dispensatory"[2].

Now Pringle was by this time a Joint Physician General of the Forces overseas and the suitability and cost of the drugs and medicines required for the Army hospitals, which had twice during the war to cope with up to 3000 patients at a time and for long periods was of much concern to him, though procurement and supply were the responsibility of George Garnier, the Apothecary General, with whom he became friendly as a fellow member with Pringle of the Committee set up to report on the breakdown of the hospital after the Battle of Dettingen at which they had both been present. (The post of Apothecary General had become effectively hereditary in the Garnier family at this time). His selection of materia medica was normally subject to inspection by the Physician General and the Surgeon General in London. The holders of these offices at this time were elderly men with little experience of the army and none of active service.

From the War Office records it appears that the initial stock of the army hospitals weighed about twenty tons for a force of only 16,000 men, which gives a faint idea of the heavy per capita demand for drugs and medicines. There were constant complaints from Civil Servants about the cost and from the army about the quality. The actual materials selected had changed very little from those employed in the Great Hospital of the Duke of Marlborough's campaigns over thirty years before. It is not surprising therefore that Pringle saw the need to modernise and standardise and that, at this point, he would have drafted what was to become the first official Army Dispensatory. It was, I believe this draft that Clerk was referring to as "your Dispensatory".

The army went into winter quarters from early October 1744 and Pringle was allowed to take leave in London, where he was introduced at the Royal Society to which he was elected in the following April, by which time he was back in Flanders. His principal medical sponsors included the doyen of the profession Dr Richard Mead, his son-in-law Dr Edward Wilmot, shortly to become the Physician General and Dr Cromwell Mortimer,Sir Hans Sloane's assistant, as well as John Ranby, Sergeant-Surgeon to the King. Among his early allies there was the polymath, William Watson, a founder of the Club of Royal Philosophers of which Pringle later became an active member. Watson had begun life as an apothecary, became a botanist and ended up a Knight and an FRCP. As well as the new edition of the Edinburgh Pharmacopoeia a new edition of the London Pharmacopoeia was being prepared. From these men Pringle must have learned how the revisions were going.

It is not surprising therefore that eighteen months later, when the Army which returned from Flanders to deal with the Jacobite Rebellion had removed that threat at Culloden and after long correspondence and some meetings with Dr Clerk in Edinburgh, Pringle was able, at an unique gathering in London, to lay before the royal medical staff and the senior medical men in the army, together with the Apothecary General, a twelve page document entitled "A Dispensatory for the Army Hospitals" to which they showed their approval by appending their signatures and ranks. This Dispensatory consisted of a list with all medical terms in Latin, of the drugs and medicines for the Army Hospital stock and specified also those required for a standard regimental chest for next year's campaign as well as the surgical instruments and equipment to be included in it.

Pringle's signature appears fourth after Richard Mead, the King's Senior Physician, Edward Wilmot by now Physician General and Benjamin Hoadley, the Physician to the King's Household. Pringle's is followed by a junior army physician, the Sergeant-Surgeon and the Surgeon-General, another royal surgeon, four army surgeons and the Apothecary General. Apart from Pringle, none of these can be seen as a contender for the authorship of the Dispensatory. Although it adopts many of the recommendations of the new London Pharmacopoeia, it retains many features which only a man with a considerable experience of army practice and requirements could have included. Pringle had then experienced four annual campaigns with two major battles, innumerable smaller engagements and sieges, and had coped with severe epidemics of most of the common army diseases.

This manuscript, which I found among the Duke of Cumberland's Papers from the Royal Archives at Windsor[6], does not seem to have been noticed by historians, though Cantlie refers to an Army Dispensatory of a later date (which he does not identify) and I was for long unable to find a trace of Pringle's Dispensatory elsewhere. However in a recent dredge through the Wellcome Library Catalogue of Manuscripts, I noticed one, "The Medulla Medicinae Universae", attributed to John Theobald MD and dated 1747. Though referred to in the Catalogue as a manuscript, it is in fact a sizeable printed book with a large amount of handwritten material added. With one addition, two omissions and some rearrangement of the main printed text (very minor changes), this work follows, word by word, the signed draft in the Duke of Cumberland's Papers.

While Pringle's authorship is not referred to and Theobald's is not mentioned, the latter claims authorship on the title page of an unauthorised translation of a work by Dr Mead, bound up with it. The sub-title to the "Medulla", (which here bears the sense of "marrow" or "pith"), reads as follows, "a New Compendius Dispensary, wherein is contained in a direct summary way all that is essentially necessary to answer every medicinal intention of cure, compiled at the command of His Royal Highness the Duke for the use of the Military Hospital abroad, by the King's Physicians and Surgeons, the Surgeon General and Apothecary General of the Army", and adds that, in its



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abbreviated form it may be likened to a "casket of jewels". Theobald's addition of an English translation with notes and indexes made civilian use feasible and partially justifies his arrogating the authorship to himself[7]. While acknowledging that it was intended for the army only, he clearly foresaw the wider civilian use to which the "Medulla" was soon put. It was undoubtedly successful as an household medical vademecum. I have traced six editions published in London, another published as late as 1771 in Dublin, and editions of 1752 and 1753 in Italian and French respectively.

Pringle's next individual contribution to matters pharmaceutical is better documented. In 1756 the Edinburgh College of Physicians issued a new edition of its Pharmacopoeia. Dr John Clerk had again been entrusted with the revision and in a letter to the President of the Edinburgh College, written sixteen years later, Pringle states categorically that he had contributed as much to the 1756 edition as he did to the 1774 edition. How much this was, will be discussed later. The extent of the changes in the 1756 edition from what had appeared in the 1735 edition are summed up by Professor David L. Cowen in his Paper on the Edinburgh Pharmacopoeia[8] in these words. "It was not until the fifth (1756) edition that a semblance of a rational cleansing of the Materia Medica was to found. The College then banished certain medicines that had been retained unchanged through superstition or credulity or established custom. Homo and his parts were completely removed and the whole list of animal simples reduced from 47 to 27". In the next edition they were to be reduced to 10.

From other remarks in later letters to the President of the Edinburgh College, it is clear Pringle did not feel the 1756 edition had gone nearly far enough. Probably Dr John Clerk felt that they had gone as far as they could carry their fellow Physicians and the Apothecaries and other users of the Pharmacopoeia. The Fellows were delighted with it but John Pringle was far from certain that they were entirely justified and criticisms particularly from Professor Rosen de Rosenberg of Uppsala in Sweden were carefully recorded in his copy. John Clerk, too, was obviously conscious that more needed to be done as, before his death in 1757, he had passed over responsibility for it to his son, Dr David Clerk, with whom Pringle entered into correspondence in the early 1760s, as he also did on the vegetable simples, with his botanist cousin and friend, Dr John Hope.

It was at this time also that Pringle became interested in developments in Vienna. At Leyden, Pringle had become both a pupil and a patient of Dr Van Swieten, the Dutch disciple of Boerhaave, who had been summoned by the Empress Queen, Maria Theresa, to Vienna to reorganise and develop medical teaching and research in her vast dominions. Van Swieten encouraged his assistant, Dr Stoerck to conduct extensive research into the medicinal use of hemlock or cicuta, stramonium and other vegetable poisons. Stoerck published his results, claiming remarkable cures particularly for hemlock in the treatment of cancer to which Van Swieten bore witness. In Britain Pringle was not alone in this interest. Dr Burnby has drawn my attention to a correspondence between his friend, William Watson, and Stoerck and to a letter from Watson to Dr Pulteney in 1772. Watson referred to being supplied with cicuta by the apothecary, William Hudson. Pringle had apparently been supplied earlier by another, Joseph Partridge, though, judging from a remark made in a letter by Richard Huck from Vienna, he may have mistaken the species he supplied as hemlock. Incidentally, Partridge, Pringle's closest associate among the apothecaries and among the most frequent of the contributors to Pringle's "Medical Annotations", had been the Apothecary General's right hand man in the previous war.

Richard Huck (mentioned above) had risen from Hospital Surgeon to be sole Physician on the North American Medical Establishment and on his return home became Pringle's protege. Pringle encouraged Huck to take a trip around the major hospitals in Europe, and his reports on what he found provide an excellent picture of the state of the Art internationally. Though Huck was sceptical about the claims made for the new drugs[9], Pringle continued to believe what he learned from Van Swieten in holograph letters in Latin also to be found in his "Medical Annotations"[10], which I have had translated. Hucks views were however later countered by another protege, Dr Jan Igenhousz whom Pringle had sent later to Vienna to introduce innoculation for small-pox. He reported encouragingly about results with some of these plants.

Pringle's enthusiasm for research into the causes of disease and into the extent to which drugs and medicines, as opposed to rest, climate and diet his usual specifics, could really contribute to cures, encouraged him to do all he could to help with the work in Edinburgh on the revision of the Pharmacopoeia from then until David Clerk's sudden death in 1767. This was a time of strife in the College between those who wished to keep out, not only Surgeon-Apothecaries, but also man-midwives, lithotomists, innoculists or any other practitioners of what they called "these Lower Arts". As a result work on the revision seems to collapsed completely until, in 1771, Dr John Boswell took the Chair and invited Pringle to take charge of it, though resident in London.

Pringle wrote back pleading ill health and overwork and suggested that Boswell search out all the letters he had sent David Clerk seven or eight years earlier but enclosed a draft of one concerning the Waters and Distillations from among his own papers. It was found that the rest had all been lost except, possibly, for the revised list of vegetable simples sent to Dr Hope. Pringle then grudgingly agreed to try and reconstruct his recommendations from his notes on his copy of the 1756 edition and from memory. He also had in what became his "Medical Annotations", a great many extensive notes including pages in Latin given to him by Dr Ruhn, who had taken them down verbatim from the lips of the great Linnaeus[11].

He soon warmed to the task and in a series of ten further letters (of which about 65 sheets of photocopies had been most kindly and generously provided to me



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by the Royal College), made page by page recommendations for the omission or revision of what had appeared in the previous edition. He advocated the adoption of a number of objectives, relying not only on his forty years experience in practice but on his sympathy with and understanding of the needs of the apothecaries. The main users of the Pharmacopoeia, emphasising that the College should avoid "science for science's sake, such as defining an ass by calling him "equus asinus" and the like, which would have too much the air of affectation and unnecessary system".

These objectives may be summed up as follows:

1) **Simplicity** for which he emphasises the need again and again, primarily by reducing the number of simples and medicines, to those that were still generally required. He says, "I must repeat my old rule: if they are equally efficaceous, keep only that one which is cheapest, or the most probably genuine, but if one is more powerful than another, then adhere to that and strike out the rest".

2) **Clarity.** Pringle was concerned less the adoption of the Linnaeann nomenclature currently in progress should lead to apothecaries making mistakes. He wrote, "I must give the London the preference with regard to their manner of ascertaining the kinds of the simples, (chiefly the plants), intended by the compilers and in their very manner, namely by referring to Caspar Bauhinus as far as he goes and not Linnaeus, because the former keeps always some part of the trivial name and sufficiently defines the vegetable in question, whereas by adding the names of the latter without, we should have them often widely different from the common ones and thereby furnish matter for some confusion without receiving any advantage from that refinement. The greatest regard is to be paid to Linnaeus as a naturalist, but our work in particular is not intended for a scientific one but one to be intelligible to every apothecary.

3) **Accuracy.** For instance not to use "cordial" for a stomachic. Being precise about medicines described as "scorbutic": they should change the name if the medicines were for skin conditions such as tetters and not for true marine scurvy, "now rarely found in inland hospitals since the change in diet". They did not follow him in this instance.

4) **Consistency** must be maintained. He instances either Rheum or Rhabarbum, not both.

5) **Economy and Freshness.** He points out that simple prescriptions can be combined extemporaneously if compounds are really necessary, but are less wasteful if kept separately and the extemporaneous combination suggested in the text. They should allow for patient preference and prescribe those with the better taste to ensure a quicker turnover. They should add brandy where shelf-life was short. He suggested that, as Canary wine was rarely found, they should specify good mountain wine instead. They should omit items available readily from confectioners.

A detailed comparison between the texts of the 1756 and 1774 editions, together with the contents of the 11 letters, shows that over 96% of about 200 positive recommendations on medicines alone were adopted, totally or partially. 86% where he recommended omission and most of the others were changed. The only class of recommendation not followed at all was where he suggested his own prescriptions in place of what was there already. here usually changes were made but his were not adopted *in toto*[12]. In some cases he discards Dr John Clerk's favourite remedies, giving his reasons. In many he cites the criticisms of the Swedish Professor Rosen to support his recommendations, though he dismisses about a third of them.

Pringle often cites the advice of Mr Clark, whom he describes as Superintendent at the Apothecaries Hall in London. This was Michael Clark whom Dr Whittet records as Operator there from 1750 and later Chemist. "You see how much I am obliged to Mr Clark. I found his modesty, his readiness to give an account of his observations equal to his abilities in his profession". "I called him a German but he is a Swede by birth". Another great advantage was his impartiality between the Scots and the English.

In April 1772 Pringle wrote: "I have finished what I had to remark on several Articles of our Dispensatory which I have written out, not without some trouble, but which I shall not grudge if, as I understand, that my labour has met with the approbration of you and the rest of the Committee". "My partiality ought to have been on the side of the Edinburgh Pharmacopoeia, not only for the honour of my native country, but because I took such a share in the last edition as I do in that which is now in our hands. And yet I can see that [in places] the present London Dispensatory has the advantage of ours, as ours in other articles the superiority over the London".

He thinks the Scots wrong to believe the Edinburgh Pharmacopoeia to be generally superior and quotes Rosen and Clark's views on the subject. "But", he continues, "we gave the first hint for simplifying", and he urges the Committee in Edinburgh to try and reduce the difference between the two Pharmacopoeias. "Lessen it in every point that is not material as well as in those of consequence when the London Physicians have manifestly been in the right, such as in the reduction of the enormous number of the Simplicia, the retrenching of several antiquated and useless compositions, and the better preparing of a few others that have been specified in the course of these remarks".

He followed up the series of letters by paying a lengthy visit to Edinburgh during the summer. The College was still going through a difficult time. Dr Boswell, having completed two years in office was succeeded by Dr Colin Drummond who resigned after eight months on removing to Bath. He in turn was succeeded by Dr William Cullen, who had led those who had dissented from further proposals to restrict the Fellowship to pure Physicians which, incidentally, Pringle in his eleventh letter to Boswell, had strongly advised the College should not pursue.

The summer of 1773 saw Pringle again in Edinburgh. He was now President of the Royal Society and had had to abandon plans to retire there but must



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have taken the opportunity of finalising the text of the Pharmacopoeia. On his return to London he wrote to his friend, Albrecht von Haller in Bern.

"I can send you no news from Edinburgh except that they propose to put our new Dispensatory into the press before winter. I say "our" because we shall have the honour of having your name stand in the list of the Members. I had written them several letters offering corrections and I find they have not been unattended to. Besides that what occurred to myself, I communicated all those I had procured from the most expert practical pharmacists. My great principle was to obtain more simplicity than what I had yet seen in any Pharmacopoeia, which sort of books seemed to be contrived wholly in opposition to the investigation of the virtues of every simple medicine. The common formulae in extemporaneous prescriptions are little better. For, by multiplying ingredients so constantly, what can result otherwise than that, after a long life and great practice, a physician is likely to go out of the world without knowing the powers of any one medicine"[13].

It was not until December 1774 that he could write again to Haller.

"Sometime ago I put into Mr Val Travers' hands a copy of the new Edinburgh Dispensatory which our College sent you in a present. I presume you will find it at least the simplest that has been published by any Society of Physicians and perhaps as good as can be made in this Age by a Body where every individual has a title to propose things to be done in his way. I say "in this Age" because I do not think that we have yet thoroughly got the better of the prejudice that, by compounding many simple medicines together, we can answer several indications at once, and getting each particular, though it is the smallest dose, to equal the force of the whole simple in the largest.

You will find a list of simples, small in comparison with that of the other Pharmacopoeias and indeed of that of the last edition of their own Pharmacopoeia, but they seem to judge well in confining the number to that which was really useful and, being so, could with the better countenance insist on apothecaries keeping every individual always fresh and good.

The chief exception to this rule was the adoption of some of those plants that had been so much celebrated of late from their specific virtues such as cicuta [and] stramonium, recommended chiefly by Stoerck of Vienna. Though these had not been used in Edinburgh yet, they believed it proper to have them in readiness in case any of their members were willing at any time to make a trial of their virtues"[14]. Pringle obviously hoped to evoke an approving comment from Haller but I have yet to find whether Haller gave him any response. It is meanwhile interesting to speculate whether by this time Haller had become sceptical about the inclusion of the vegetable poisons which he knew was near to Pringle's heart, but did not care to tell him so.

These additions were probably the most unusual feature of the new edition. In his sixth letter to Boswell, Pringle, while welcoming their decision to reduce the simples, hoped they would include all the poisonous plants "recommended to us from Vienna. I have a notion in general that our most efficaceous medicines will be found in that class . . . and I have good opinion of the veracity of Dr Stoerck and Baron Van Swieten who have attested to so many curious facts relating to them". Among those actually included for the first time were aconitum, colchicum, daphne mezereon, papaver somniferum album and stramonium. The botanical description of cicuta which had been in the previous edition was changed to "conium seminibus striatis" and the use of the seeds as well as the leaves was added. If Haller did fail to comment, a clue to his reasons may lie in a letter he wrote to Dr Tissot about this time. Haller told him that he heard from Vienna that the Professors of Medicine there were quarreling so fiercely that they embarassed their hearers and threw suspicion on the vegetable poisons they had recommended[15].

Whatever Haller may have thought, the College was delighted with their new edition. At a meeting in February 1775, after there had been time for its general reception to be assessed, a Motion was made by the President, William Cullen, that thanks should again be given to their worthy colleague Sir John Pringle Baronet, President of the Royal Society, for the many favours he had done them with respect to it and particularly that they should take notice that Sir John, though far removed from the College, had not thought himself absolved from the duties he owed them but had, with much zeal, done them all the services in his power and thereby set an example to all members". Pringle replied with suitable modesty.

No reference is made in their minutes to similar thanks being given to any other contributor to the success of this edition. The main credit for the 1774 edition has in the past been given to Drs Cullen and Black. In this Professor David Cowen followed two German authorities but, having sent him a draft of this talk, I received from him a most generous letter in which he suggested I should say that, despite what had previously been stated, it was undoubtedly largely Pringle's handiwork and reflected his ideas on Materia Medica. Thus here at least it is seen that he left his mark as a great exponent of the medical art in a palpable way, though here too his influence has hitherto been scarcely noticed by historians.

**Notes**

1. Yale University Library MSS. M 217. 1 & 2
2. RCPE MA Vol.1. 37
3. Since this talk was given it has been noticed in the youthful diary of Dr John Boswell (Lord Auchinleck's brother and PRCPE 1770-1772 - College MS) that George Young gave extramural lectures at this time to medical students in Edinburgh, including John Boswell, who was also at the same time apprenticed to John McGill, a Surgeon-Apothecary and Chemist.
4. RADCP 67.X.32.8
5. Letter to Albrecht von Haller 12.2.1773 Bern MS HH XVIII.33
6. RADCP 2.26
7. A James Theobald of Surrey St, London, was an FRS from 1725-59 but John Theobald has not been identified.
8. In "Medical History" 1957
9. RCPE MA Vol.7. 34
10. ibid Vol.6. 165
11. ibid Vol.7. 482



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12. Pringle was not to be deterred. So confident was he of the merits of his "Formulae" (as he called his prescriptions) that he wrote them all out in book form as a companion volume to his "Medical Annotations, with careful cross-references to the relevant "Articles". In his meticulous way he continued to add and correct until his death and it fell to Huck-Saunders (he adopted the second name on marriage) to give effect to his old friend's intentions by writing out a fair copy in his own hand and sending it to the College. RCPE Minutes p. 1582
13. Bern MS HH XVII 33. 129
14. ibid. 34. 185a.
15. Haller-Tissot Letters p.398

**Abbreviations**

**MA = Sir John Pringle's "Medical Annotions"**
**RADCP = Royal Archives, Windsor Castle. Duke of Cumberland's Pp**
**RCPE = Royal College of Physicians in Edinburgh**
**PRCPE = President of RCPE**

# Meeting in Holland

Three members of BSHP, Dr J Burnby, Miss A Hutton and Mr L Matthews, took up the kind invitation of the Benelux Society for the History of Pharmacy to attend their annual autumn meeting which this year was held at Amersfoort, Holland, October 14-15. After lunch at the EurOase (sic) Hotel a few miles out of the town in an attractive woodland setting, the group gathered at the Hospice of St Pierre (or St Pieter) and Blokland, an almshouse and hospital for elderly men built around 1530. Opposite, crossing the canal by footbridge, was the Museum Flehite. Both buildings had exhibits of pharmaceutical interest, apothecary jars, mortars, bezoar stones, microscopes, herbals, and of course, the traditional figure-heads known as 'Gapers'.

Returning to the hotel four papers were heard which ranged from Dr Wittop-Koning's on 'catch-penny prints', and Dr Mattelaer's on traditional medicine in Tibet to Mr de Munck on the statue of Peeter de Coudenberghe, the great Flemish botanist and apothecary of Antwerp. Dr Burnby (in English) gave a paper on the "Changing rôle of the English Apothecary" in which she traced his route from the mediaeval spicer to the surgeon and apothecary of the late 18th Century.

At dinner that night conversation was less concerned with the practice of pharmacy in the past than that of the future. It was interesting to note that Continental pharmacists also regard "1992 and harmonisation" with a degree of apprehension. Even two countries so closely related as Belgium and and Holland have today substantially differing regulations.

The following morning was given over to the Society's business affairs. The president, Mr E L Ahlsrich having held the position for many years, decided that he must resign, and in order to recognise all the work he has done for the society he was presented with a china unicorn with a magnificently gilded horn. Official business being concluded, four more papers were heard. The most ambitious was undoubtedly that of Mr Geldorf's "Pondera Medicinalia", the speaker having just published as his own venture, in Dutch and English, a book of the same name. He dealt with the complex subject of the development of the differing weights used in pharmacy from the Babylonian period until recent time, and from one country to another.

The afternoon was spent in a guided tour of the beautiful town of Amersfoort, once encircled by, not one, but two town walls. It is known that as early as 1436, Amersfoort had a town apothecary, 'Jan de Apteker', although the first ordinance concerning apothecaries was not issued until 1659. In 1971, Amersfoort with a population of 79,000 had nine pharmacies. On the return journey to Hook, the English party had the pleasure of visiting for all too short a time the home of Dr and Mrs Van Gelder at Gorinchem where they saw a wonderful collection of pharmaceutical antiques and early printed herbals.

The welcome received from the Benelux Society was quite overwhelming. Greetings and good wishes were sent to BSHP, and several people expressed their intention of attending the BSHP Spring Conference at Gloucester next April.

We will be delighted to see them. **J.B.**

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